



Bare Server Build

REV 7

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Introduction

There are 4 major components and 2 optional components involved in a BOC deployment.

Required

1. BOC Connector
 - a. Provides connectivity between the CallManager server and the database. There may be multiple connectors based on size of deployment.
2. BOC Database
 - a. Houses the BOC data and client configuration. This may reside either on the Connector or on an existing production SQL server. Frequently, the database is configured on the initial connector for setup purposes. After successful testing, the connector is then re-targeted towards a production SQL server.
3. BOC Watchdog.
 - a. Monitors the various connectors and handles errors and updates.
4. BOC Client
 - a. This is the piece which resides on the end user's machine giving them call control. It can be either Windows based, or web based such as on the Android platform.

Optional

1. BOCWeb
 - a. Provides the interface between the database and the web based BOC clients such as tablets and mobile devices. There maybe one or more instances of this configured depending upon needs. Typically, there is one for internal clients and one for external clients. NOTE, it is recommended that the BOCWeb configured on the connector be used to service internal network clients only. A separate, properly secured web server should be configured if external mobile devices are desired.
2. BOC Exchange Connector
 - a. This is an additional connector providing real-time schedule data to the BOC client allowing the user to view availability of a given person on a week by week basis as well as access to contact information.
3. Microsoft Lync Connector
 - a. This is an additional no-charge connector providing real-time data to the BOC client allowing the user to view availability of a given person and/or optionally transfer calls to Microsoft Lync users.

Installation Basics

You need to define which roles you will run on the machine we are building. Each role has different installation requirements.

Prior to the BOC installation, some basic steps should be accomplished.

Install Windows 2003 or greater to defaults with all of the latest Microsoft Service Packs applied. This machine should not be a domain controller. It is recommended that all services not specifically required be stopped.

NOTE: Make certain that Event Viewer is set to overwrite as needed and file size is 2048 bytes or greater.

Create a folder on the C:\ Drive called BOCIMAGES. This will be where we save all of the downloaded installation software images. Under this, make another folder called BOCClient. Share it so the end user can install client can be installed from here.

Download and install Microsoft SQL 2008 R2 Express or whichever version you care to use. We also recommend downloading and installing the version which includes Management Tools.

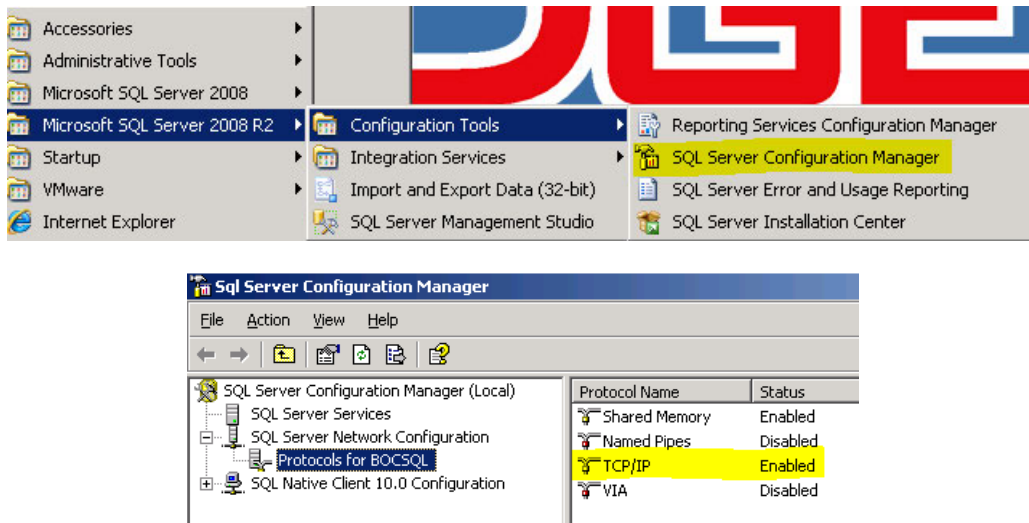
SQL Installation

We do not provide the SQL installation media. SQL Express is readily available for download at no charge from Microsoft. It will support between 2500 and 2700 phones depending upon actual call volume. We support SQL 2005 and later.

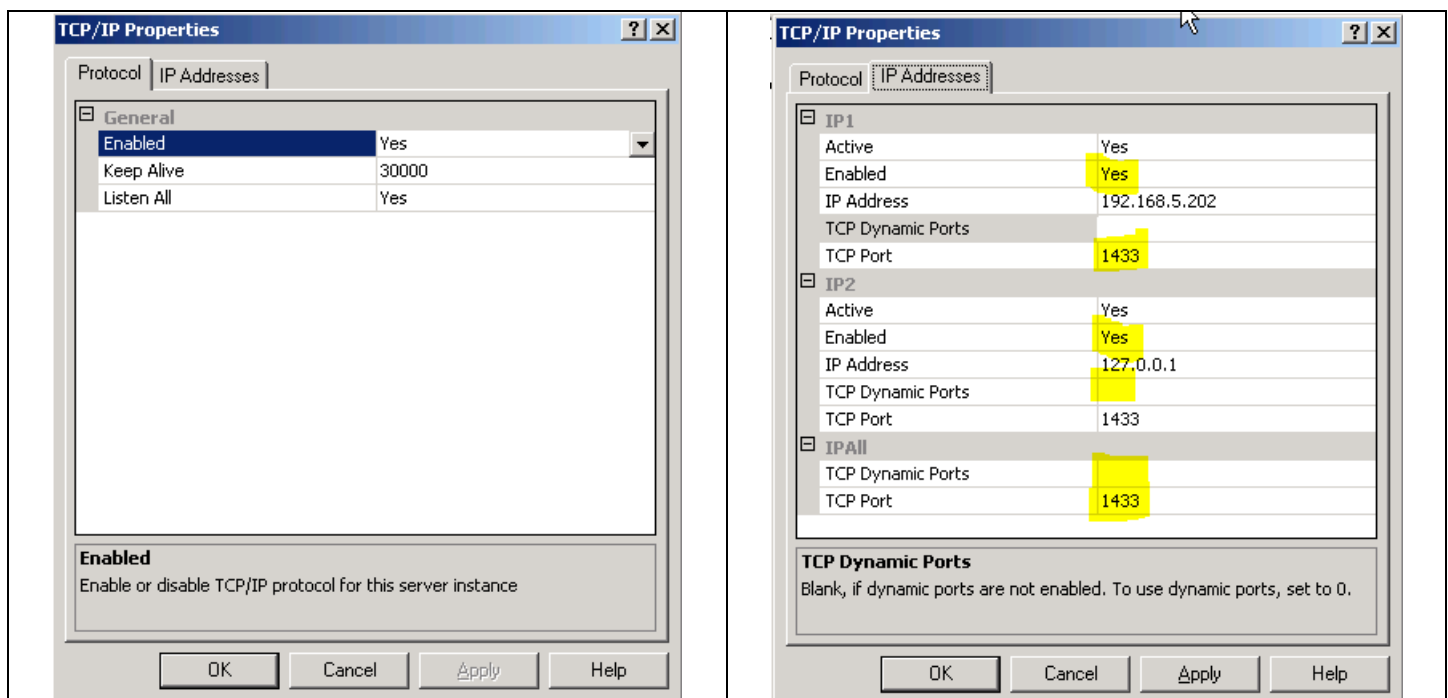
When downloading SQL Express, make certain you select the download with Management Tools. This will give you SQL Management Studio Express which is required to maintain certain settings.

We recommend installing as a named instance called BOCSQL. This will be universal across installations and ease in the troubleshooting process. We MUST configure mixed mode authentication and set an SA password. We recommend making the SA password the same as the password for BOC-Admin.

After the installation, you will need to configure the listeners so the SQL can be accessed.

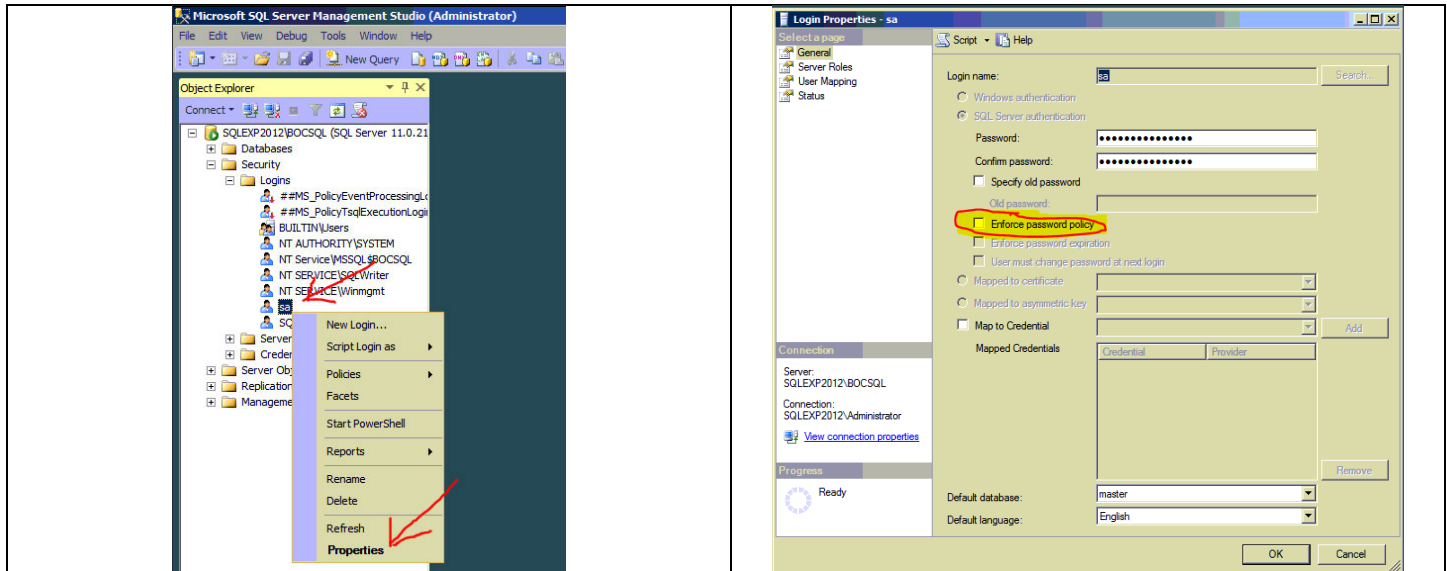


These settings are a setup guideline only. Please secure per your network policies.



Pay attention to the highlighted areas. They are not the defaults. Generally speaking, we do not use dynamic ports and we force to TCP Port 1433. Also note that all IPs are DISABLED by default and the proper ones must be enabled. In a general sense, TCP Dynamic Ports must be **blank not 0**, and the TCP Port should be set to 1433. Do not forget to do this in the IPALL section as well.

Launch SQL Management Studio



These settings are a setup guideline only. Please secure per your network policies. We recommend turning off “Enforce password policy” on the SA account in SQL Management Studio to prevent account lockout during deployment.

Also ensure that any Windows firewall is either disabled or the proper allowances made to pass the required ports. Specifically, TCP port 1433 for SQL and whichever port you choose for Sockets mode in the TAPI GUI.

Installation Prep

Create DNS records for the following.

bocdb.<yourdomain> pointing at the database server IP. (The connector for now)

bocstatus.<yourdomain> pointing at the status server IP. (The connector for now)

ie.... bocdb.bridgceoc.com

Download the latest installations from the links in your email into the C:\BOCIMAGES folder.

At a minimum, you will need the BOC TAPI Connector. Move the client installs into C:\BOCIMAGES\BOCCLIENT folder. If you share this folder, it will make it easy to do the installation of the clients from here.

NOTE: If the server is Windows 2008 R2, you will need to enable the .NET 3.5 “Feature” in the Windows Server Manager Tool.

We’ve included an installation wizard that will check and verify many of the required settings.

Install TSP on the BOC Server

Cisco TAPI Driver (TSP)

You will need to install the TAPI driver from your CallManager Server. You can download the TSP installation software directly from the URL, <https://<your CUCM> /plugins/CiscoTSP.exe> OR <https://<your CUCM> /plugins/CiscoTSPx64.exe>

Or to install from the Plugins link in the CCM Admin interface, log in to your CallManager web interface. The TAPI driver which matches your present installation is found under Application -> Plugins.

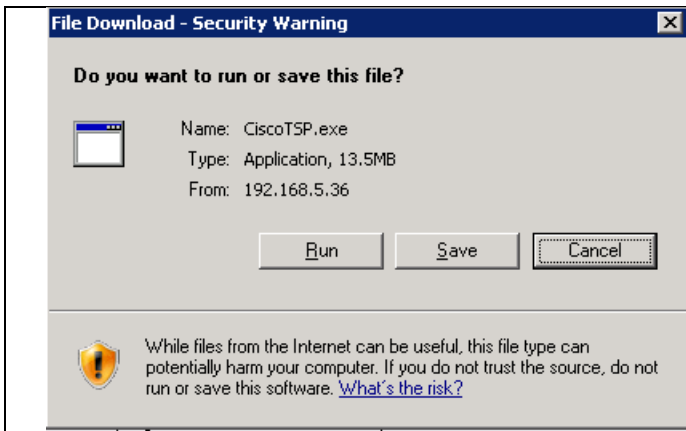
NOTE: Do NOT install the TAPI driver through terminal services. (NO RDP or MSTSC). There have been inconsistencies noted by many vendors when this is done. Do it from a console. The rest of the BOC utilities will install from remote connections just fine.

These steps are for 8.x/9.x CUCM systems. For prior versions, see Appendix A.

The screenshot shows the Cisco Unified CM Administration web interface. The top navigation bar includes links for System, Call Routing, Media Resources, Advanced Features, Device, Application, User Management, Bulk Administration, and Help. The 'Application' menu is expanded, showing 'Cisco Unified CM Assistant Configuration Wizard' and 'Plugins'. The main content area displays 'Cisco Unified CM Administration' with system version 8.5.1.10000-26. It includes a license report link and VMware installation details: 4 vCPU Intel(R) Xeon(R) CPU E5440 @ 2.83GHz, disk 1: 100Gbytes, 6144Mbytes RAM. A footer section contains copyright information and links to U.S. laws, system documentation, and technical support.

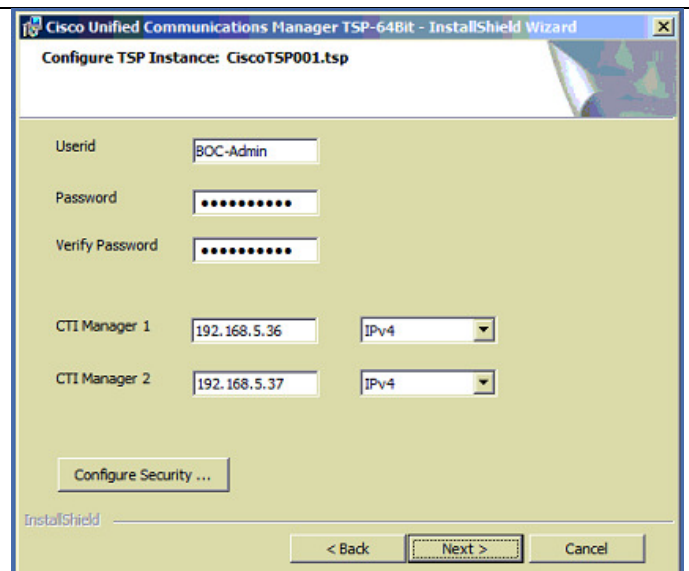
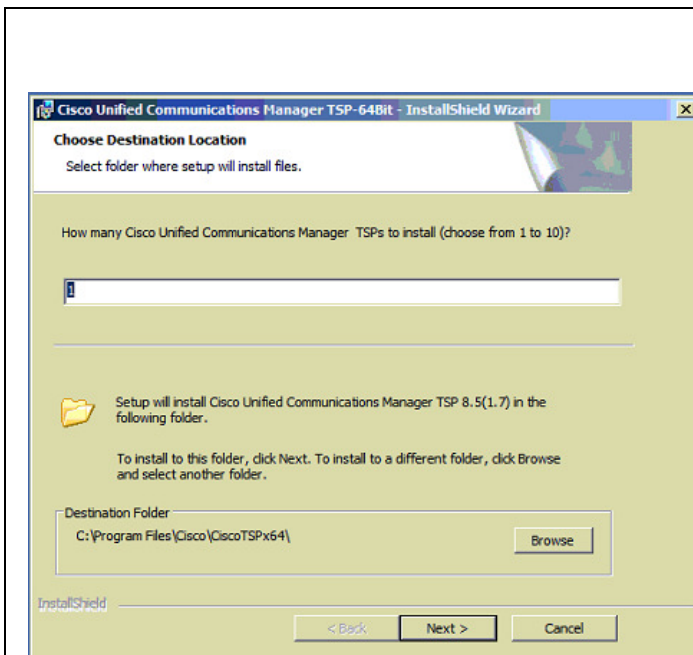
This screenshot shows the 'Find and List Plugins' page in the Cisco Unified CM Administration interface. It displays a table of available plugins with columns for Plugin Name, Description, and Download link. The 'Cisco TAPI 32-bit' plugin is highlighted in yellow. To the right of the screenshot, there is a text box providing guidance on selecting the correct version.

Choose the version to match your Connector or Client OS version. If you are running 8.5 Update 1 or greater, you will also have the option of a 64-Bit version.

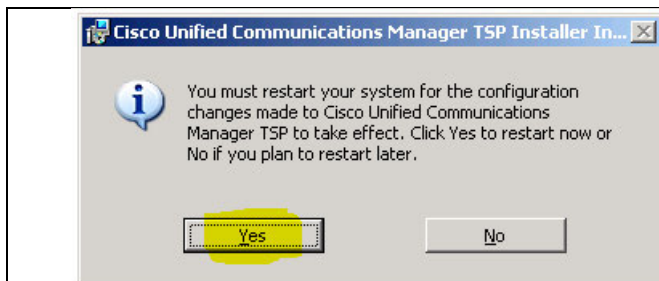
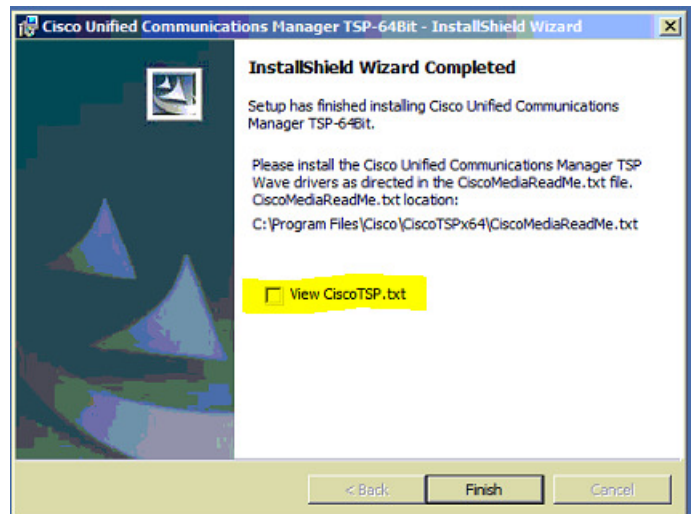
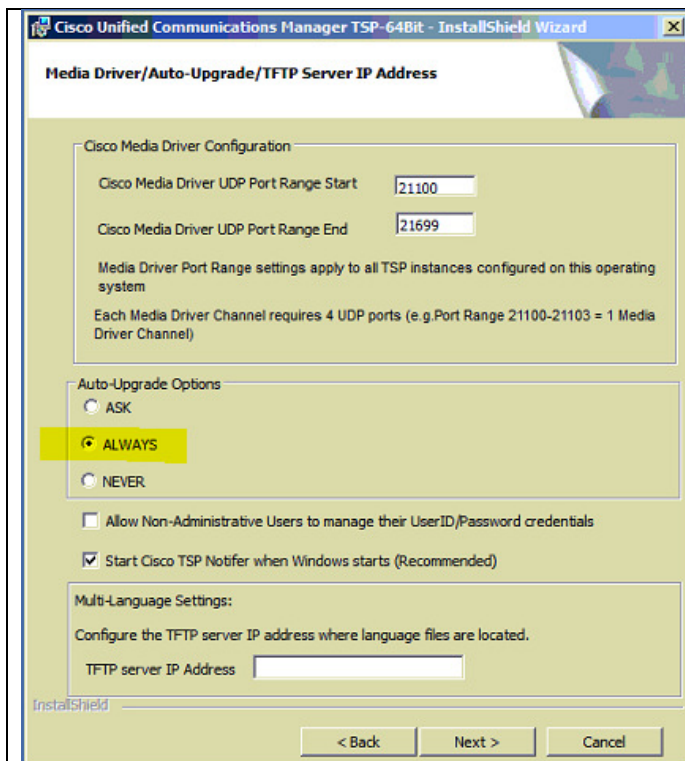


Install the TSP using the default installation directories.

You may answer no to this question.... Enter the IP address of your CUCM server on the next window.

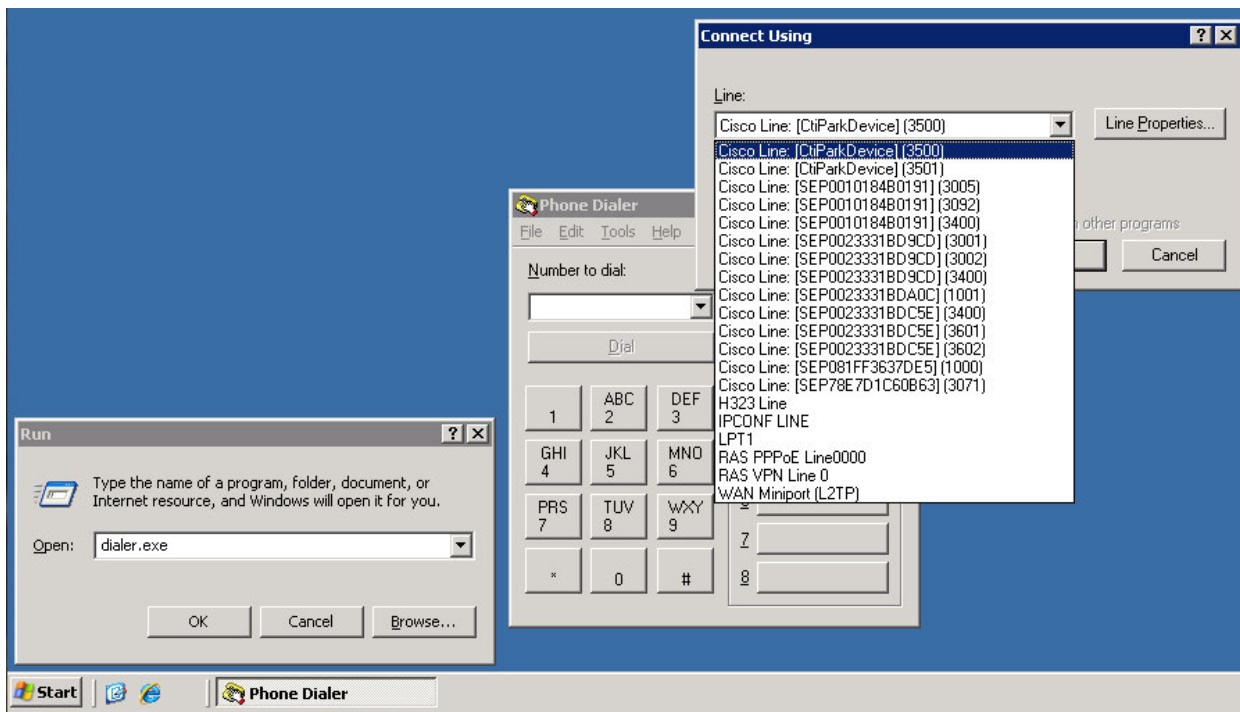


Configure using the information from the Call Manager Objects document. The CTI Managers should reflect your Publisher and if available, subscriber CUCM.

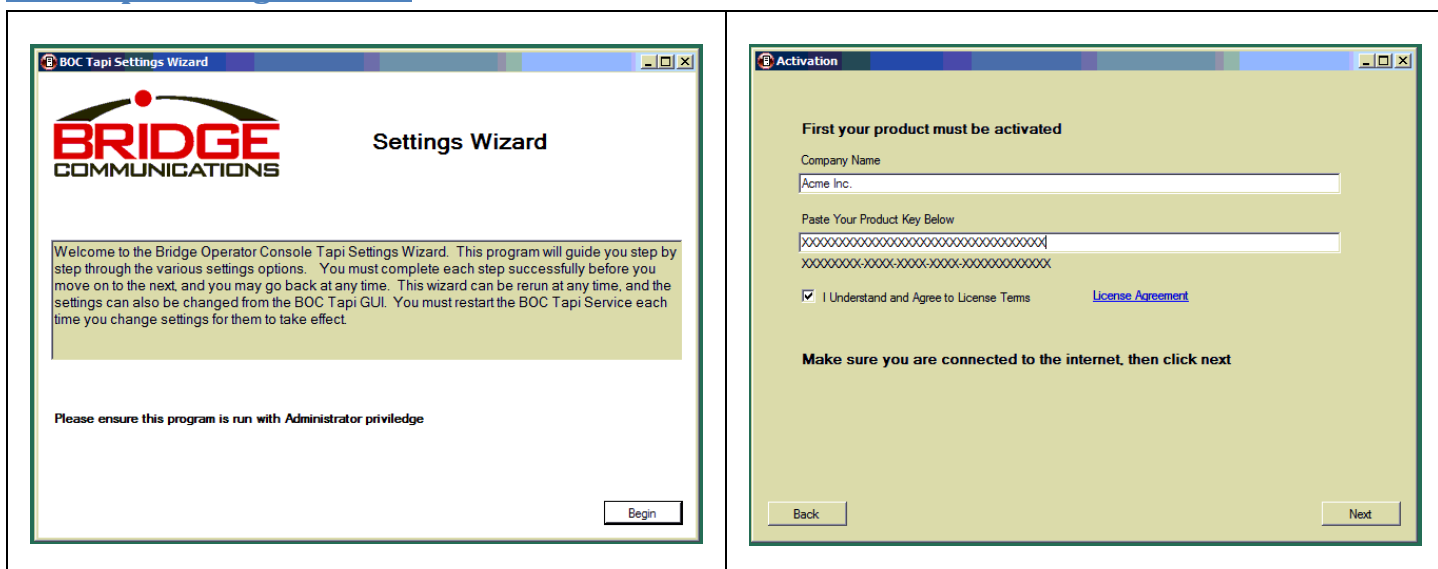


Testing TAPI Connection

You should validate that the TSP service is functioning before proceeding by running DIALER.EXE. Dialer is a Microsoft application that operates at the same level that we do. When you see the "Connect Using" pull-down, you should see Cisco devices listed. If you do not see anything referencing Cisco, go back and double check the CallManager object creation process documentation. Frequently it's a missed step or a password problem. If you ONLY see **CtiParkDevices**, you have not assigned any phones for control to our user (BOC-Admin typically). Normally, you will assign ALL SEP's in your organization to our user. If any are missed, you will be unable to see status or control that device. There should never be CTI devices other than the CtiParkDevice.

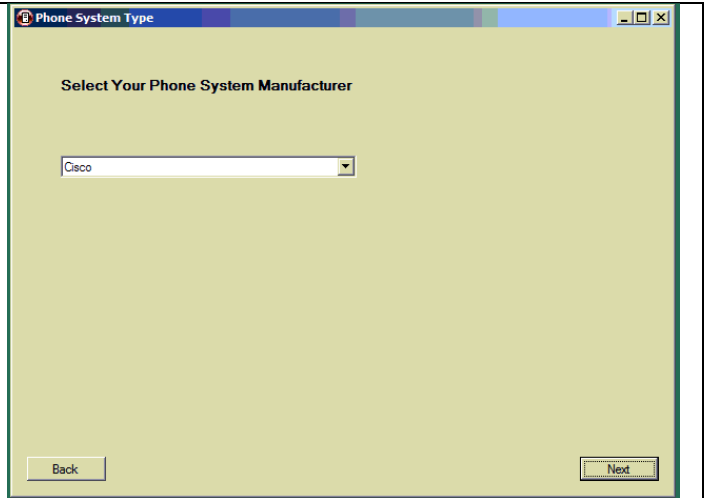


BOC Tapi Settings Wizard



If you have difficulty activating, it is usually a result of a proxy or content filter blocking access.

If you are unable to bypass the proxy for the purposes of this installation, you will need to cancel this setup wizard and launch the BOC Tapi Gui application. From in there you can define proxy credentials.

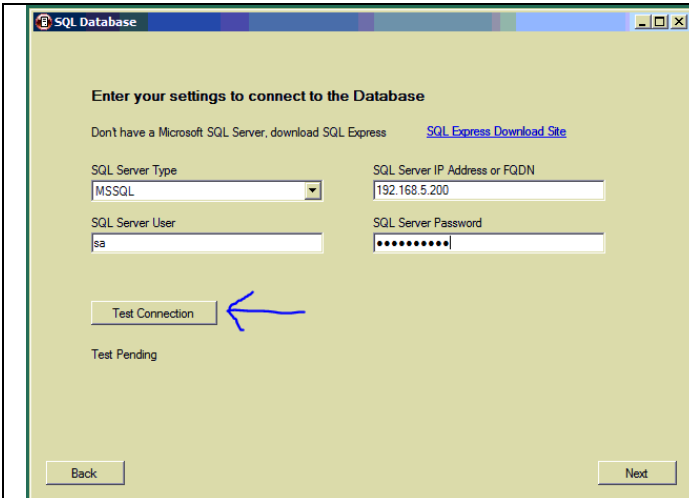
A screenshot of a software window titled "Phone System Type". The window has a light green background. At the top, it says "Select Your Phone System Manufacturer". Below this is a dropdown menu with "Cisco" selected. At the bottom, there are two buttons: "Back" on the left and "Next" on the right.

Phone System Type

Select Your Phone System Manufacturer

Cisco

Back Next

A screenshot of a software window titled "SQL Database". The window has a light green background. It says "Enter your settings to connect to the Database". Below this is a link: "Don't have a Microsoft SQL Server, download SQL Express [SQL Express Download Site](#)". There are four input fields: "SQL Server Type" (dropdown menu with "MSSQL" selected), "SQL Server IP Address or FQDN" (text box with "192.168.5.200"), "SQL Server User" (text box with "sa"), and "SQL Server Password" (password box with "*****"). Below these fields is a "Test Connection" button, which is highlighted with a blue arrow. Below the button, it says "Test Pending". At the bottom, there are two buttons: "Back" on the left and "Next" on the right.

SQL Database

Enter your settings to connect to the Database

Don't have a Microsoft SQL Server, download SQL Express [SQL Express Download Site](#)

SQL Server Type: MSSQL

SQL Server IP Address or FQDN: 192.168.5.200

SQL Server User: sa

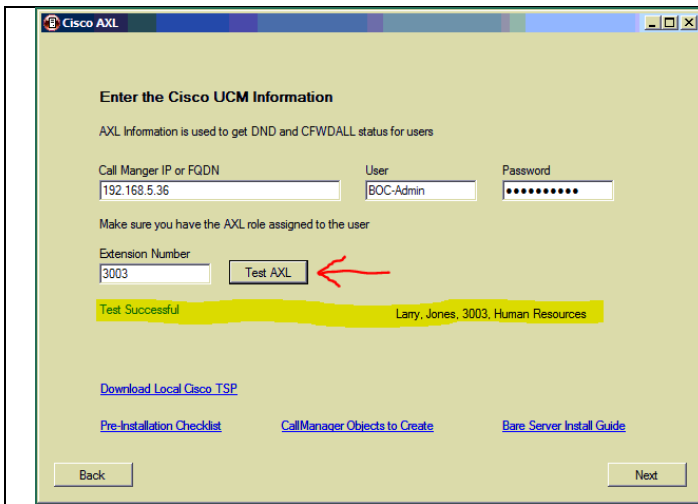
SQL Server Password: *****

Test Connection

Test Pending

Back Next

Fill in the appropriate information here. When you are done, hit the "Test Connection" button. If it is successful, you may proceed. If it fails, consult your SQL documentation or Database professional. Basically this test is stating whether or not a connection can be made to the state database using the stated credentials. Common causes of failure are firewalls and/or default SQL communications settings.



Cisco AXL

Enter the Cisco UCM Information

AXL Information is used to get DND and CFWDALL status for users

Call Manager IP or FQDN: 192.168.5.36 User: BOC-Admin Password:

Make sure you have the AXL role assigned to the user

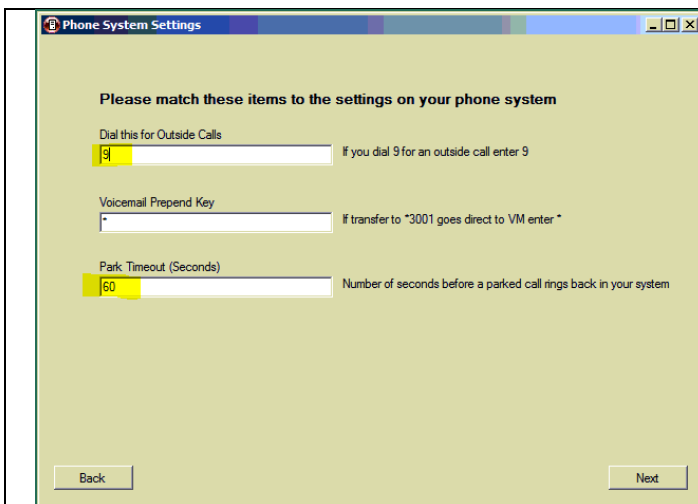
Extension Number: 3003 **Test AXL** (indicated by a red arrow)

Test Successful: Larry, Jones, 3003, Human Resources

[Download Local Cisco TSP](#)
[Pre-Installation Checklist](#) [CallManager Objects to Create](#) [Bare Server Install Guide](#)

Back Next

Add in your CallManager information. Enter a valid extension and do the test here as well. Notice on the bottom, links to several resources in the event of a failure here.



Phone System Settings

Please match these items to the settings on your phone system

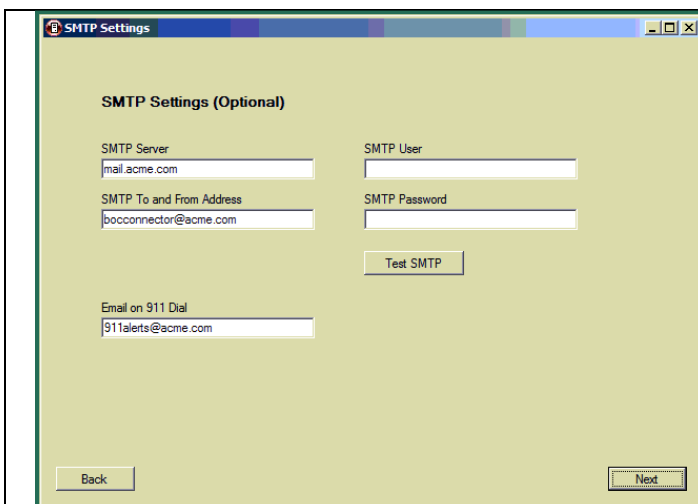
Dial this for Outside Calls: 9 If you dial 9 for an outside call enter 9

Voicemail Prepend Key: * If transfer to *3001 goes direct to VM enter *

Park Timeout (Seconds): 60 Number of seconds before a parked call rings back in your system

Back Next

Verify each of these.



SMTP Settings

SMTP Settings (Optional)

SMTP Server: mail.acme.com SMTP User: SMTP Password: Test SMTP

SMTP To and From Address: bocconnector@acme.com

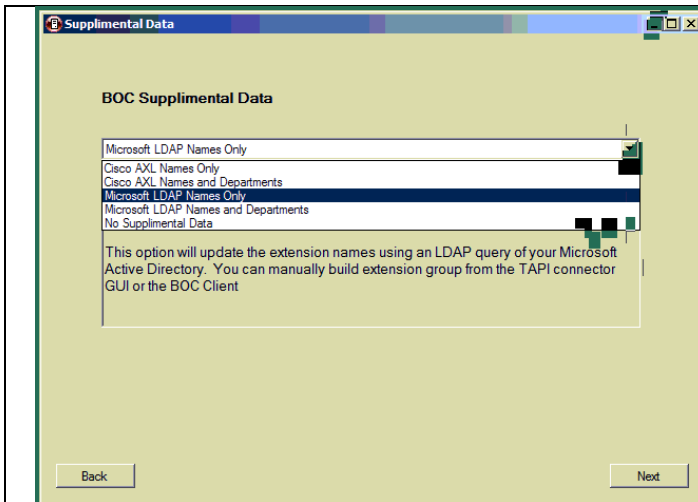
Email on 911 Dial: 911alerts@acme.com

Back Next

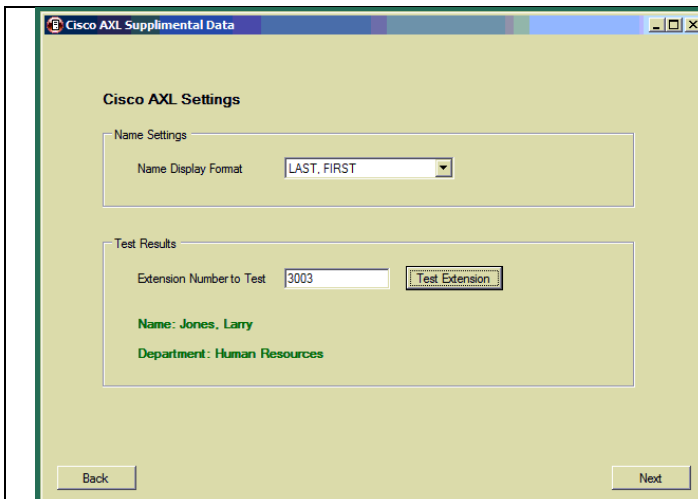
These settings enable the system to send email alerts when a 911 call is placed. Frequently, these will go to a distribution group with a receptionist for emergency personnel direction and someone to speak with whomever placed the call.

Notice the links on the page to download the proper pieces if the tests fail.

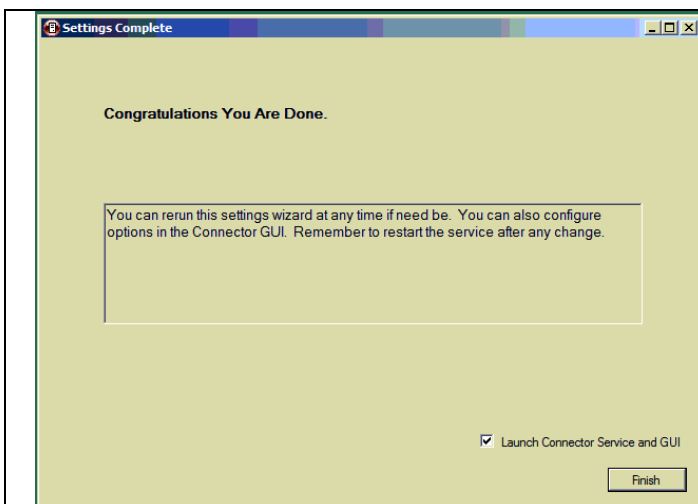
These steps will validate all of the required pieces for a successful BOC Connector deployment.



Extensions are pulled automatically. Supplemental data such as extension names and department can be pulled from various places. Choose the one most appropriate for your organization.



And then test.



Completed.
These steps will validate all of the required pieces for a successful BOC Connector deployment.

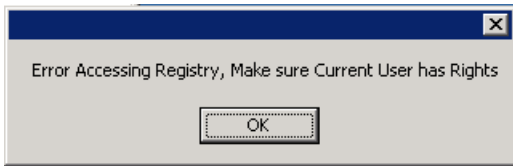
Installing the BOC TAPI Connector

Run the installation you downloaded earlier, SetupBOCTapi.msi. For the most part the defaults are just fine.

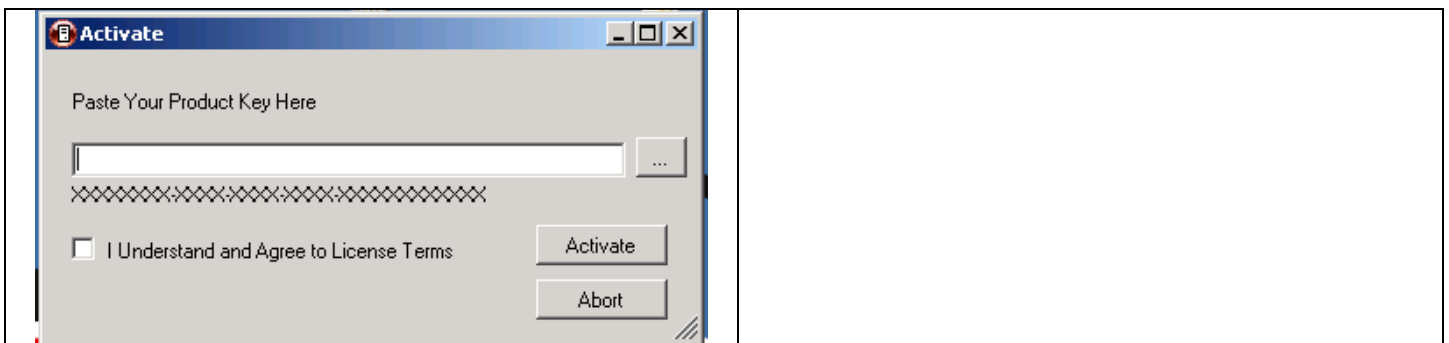
After the installation completes, reboot.

Then run the BOC TAPI GUI.

Enter your license key and accept the agreement when prompted and then click Activate. Occasionally, you may see an error referring to accessing the registry. If this is the first time the program has been run, you may disregard the error and continue.

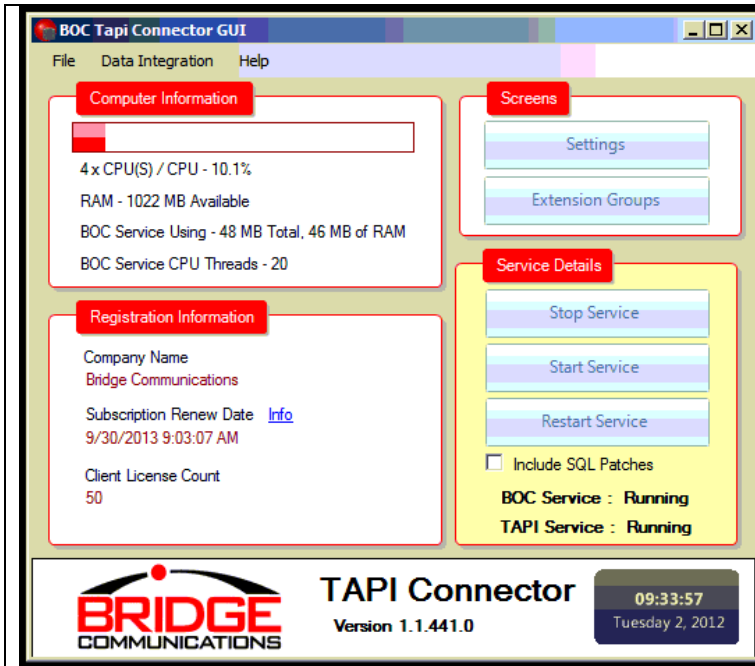


Once the GUI is launched, you must configure the server settings before it will function properly.



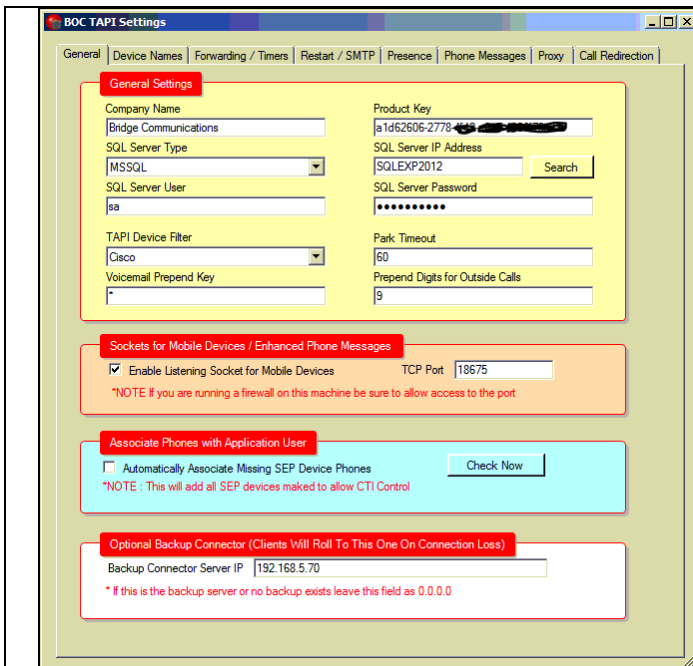
Connector Server Configuration

The SMTP information is optional, but will keep an administrator abreast of updates and error conditions as they arise. **NOTE:** We recommend that you do not fill out the SMTP reporting until AFTER the install is functioning properly as it can generate a lot of emails if you experience installation problems. The second tab allows CallManager AXL and LDAP integration with Active Directory. **The box need not be checked however.** The third tab allows the “Forward For” function to also forward all internal calls to another extension rather than just external callers. The 4th and final tab is to configure the TAPI connector to restart nightly at 12:00am. This is helpful with older TAPI installations.



This is the main Tapi Gui Page
It provides a number of bits of information as well as
allowing you to start/stop/restart the services.

Click On **Settings**.



Configure the SQL Server entries to match this box unless you
are using an off-box production SQL server.

You can choose to get your supplemental data from either AXL on the CallManager or Active Directory via LDAP.

Enable AXL Info Partition Searching should only be checked in a multi-tenant situation.

Do NOT check this unless you are multi-tenant.

The Active Directory connection does NOT require the CUCM to be AD integrated. We maintain our own connection. There simply needs to be an Active Directory field populated with the end user's extension in some form. If the checkbox for **Exact Phone Match** is NOT checked, we do fuzzy matching. Example.... Extension **5206** will match a user who has +1-555-555-**5206** in his IP Phone field. You may also choose another LDAP field for us to match on. A common substitution is the Telephone number field.

If AXL is chosen we can gather from 2 places. If the **Update Type** is set to **Full**, we will attempt to match the known extension with the telephone number field on a user in the End Users table on CallManager.

If the **Update Type of Name Only** is chosen, the Alerting name is taken from the extension (under Directory Numbers)

These settings will allow you to tune performance and behavior. Normally they are not adjusted unless specific issues exist.

BOC TAPI Settings

General | Device Names | Forwarding / Timers | Restart / SMTP | Presence | Phone Messages | Proxy | Call Redirection

Server Reboot (May be required on older CUCM to cycle TSP)

☐ Sunday Night Reboot - To Cycle Tapi Service

SMTP Error Reporting (Optional) and Settings

SMTP Server:

SMTP User (Authenticated SMTP Only):

System Event Email Recipient (for Debug Only):

SMTP Password (Authenticated SMTP Only):

911 Alerting Email Recipient:

Test SMTP

You can schedule a weekly reboot on a Sunday night by checking the box.

The SMTP section is to allow certain kinds of alerts to be sent. You can enter a SMTP server to use for this purpose. It must allow us to relay off it. We can pass authentication if required for relaying.

The first kind of alert is for debugging purposes only. We do NOT recommend configuring a System Even Email Recipient unless instructed to do so by Support.

You can define an email address to send an alert to if 911 is dialed on the system. We recommend this be a group so that multiple people are alerted.

**THIS IS FOR ADMINISTRATIVE ASSISTANCE ONLY
and not to be used in place of a proper 911 alerting system
or Emergency Responder Package.**

BOC TAPI Settings

General | Device Names | Forwarding / Timers | Restart / SMTP | Presence | Phone Messages | Proxy | Call Redirection

XMPP Presence Settings

☐ Update BOC Status From an XMPP Server

Examples : Cisco Unified Presense, Jabber, Openfire, Apache Vysper etc.

XMPP User Jid (user@server):

you@yourdomain.com

XMPP Jid Password:

Obtain User's Jids From:

LDAP EMAIL

BOC will scan the list of emails gathered from ldap and attempt to match status updates to the phone extension. Note you must have the BOC Tapi Connector set to update names from LDAP to use this method.

You can define integration between BOC and an external XMPP server. Most commonly this is a Cisco Unified Presence Server (CUPS) or a Jabber server. It is very important you follow the section on configuring CUPS integration to get it to work properly.

BOC TAPI Settings

General | Device Names | Forwarding / Timers | Restart / SMTP | Presence | Phone Messages | Proxy | Call Redirection

Enable Phone Messages / Serviceability XML User Settings

☒ Enable Screen Messages to Supported Phones ☐ Force HTTPS Messages
☐ Notify Users of Failed Messages

User Settings

User: Admin Password: ***** Phone SEP Number to Test: SEP000000000000 Test Account
 * This user requires CCM Admin rights

Phone Message Sounds

Test Phone IP: 10.0.0.1

Park For Sound: chime.raw BOC Forward Sound: chime.raw 911 Dial Sound: chime.raw

Display Emergency Call Messages on These Phones

Filter: Add

Extension	Name

Remove Selected

Phone IP Scan Utility

Scan New Scan All View Found

Phone Messaging and Paging (PM&P) allows the operator to send various sorts of alerts and pages to an end user phone. It is very important that you follow the CallManager steps for PM&P and have them in place BEFORE attempting to configure this.

The user entered in here MUST have CCM Admin rights. It is not sufficient to assign CCM Admin rights to the BOC-Admin user and use that. When a user is selected, you can enter various information and test messaging to the phones. Once properly configured, you can enter telephones which can receive splash messages when 911 is dialed.

BOC TAPI Settings

General | Device Names | Forwarding / Timers | Restart / SMTP | Presence | Phone Messages | Proxy | Call Redirection

Proxy Settings

☒ Use Proxy Settings Proxy Server: 127.0.0.1 Port: 8080
 Detect

Proxy User: ***** Proxy Password: Proxy User Domain:

Proxy Test

http://www.google.com Test Settings

Test Results (Pictures will not be displayed)

Notes

Setting a proxy server should only be needed when it requires a domain user authentication
 BOC will work with the IE settings for most proxies without this option

Our updating process depends upon a reliable connection to the internet. If you are behind a proxy server and the normal Internet Explorer configuration is not working, you can enter and validate your proxy credentials here so that the update process can happen automatically.

TIP: To aid in troubleshooting, we recommend installing the BOC Client on the server. Our license count is concurrent, so as long as you exit when you are done, you won't hurt the license count. You can follow the normal client install steps from later in this manual.

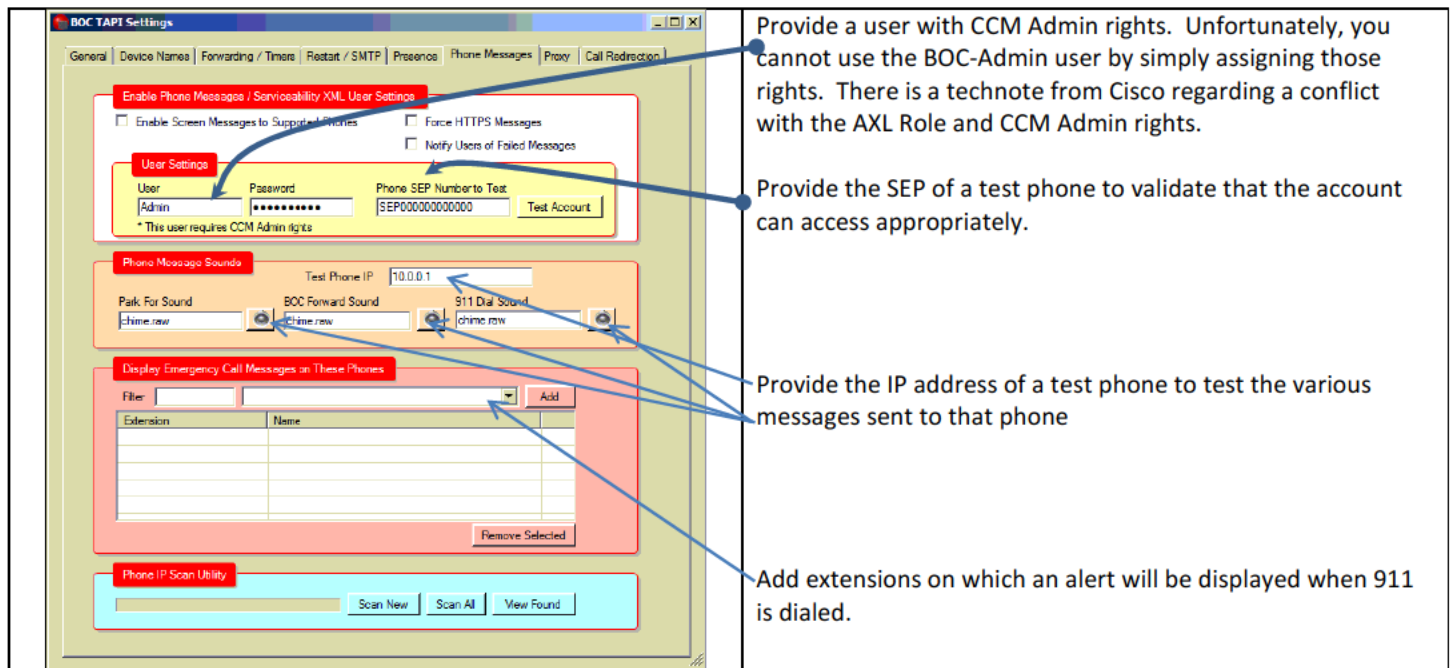
Watchdog Setup

Once you have verified the Connector is starting and all is well, check the service and make certain it is set to automatic start.

Depending on the timing, the Connector may automatically download and install the Watchdog service. Once it is installed, make certain it too is running and is set to automatic start.

Phone Messages and Paging

This feature will enable the Park For feature to pop a message on the telephone handset indicating a call parked for them. It will also allow voice paging of individual handsets irrespective of call status. Be certain to complete the steps from the CallManager Objects REV 3 document for enabling PMP on the CallManager before enabling in the Connector. Please note, the user entered here **MUST** have CCM Admin rights. For a list of available sounds, please consult the TFTP directory on the CallManager.



The screenshot shows the 'BOC TAPI Settings' window with several tabs: General, Device Names, Forwarding / Timers, Restart / SMTP, Presence, Phone Messages, Proxy, and Call Redirection. The 'Phone Messages' tab is active. It contains several sections:

- Enable Phone Messages / Serviceability XML User Settings:** Includes checkboxes for 'Enable Screen Messages to Support Privates', 'Force HTTPS Messages', and 'Notify Users of Failed Messages'.
- User Settings:** Includes fields for 'User' (set to 'Admin'), 'Password' (masked), 'Phone SEP Number to Test' (set to 'SEP000000000000'), and a 'Test Account' button. A note states: '* This user requires CCM Admin rights'.
- Phone Message Sounds:** Includes a 'Test Phone IP' field (set to '10.0.0.1') and three sound selection buttons: 'Park For Sound' (set to 'chime.raw'), 'BOC Forward Sound' (set to 'chime.raw'), and '911 Dial Sound' (set to 'chime.raw').
- Display Emergency Call Messages on These Phones:** Includes a 'Filter' dropdown, an 'Add' button, and a table with columns 'Extension' and 'Name'. Below the table is a 'Remove Selected' button.
- Phone IP Scan Utility:** Includes 'Scan New', 'Scan All', and 'View Found' buttons.

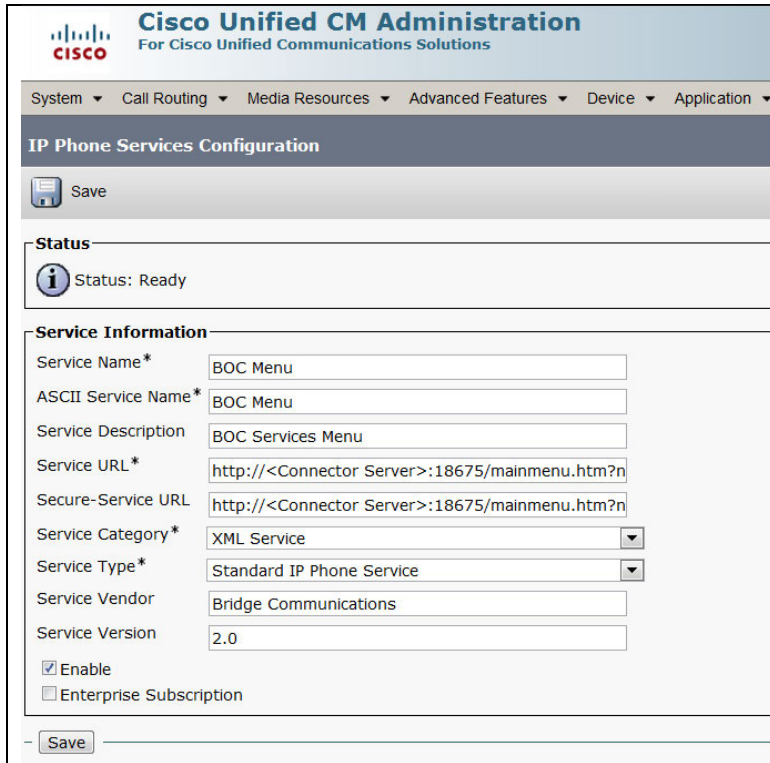
Annotations with arrows point from the following text to specific fields in the screenshot:

- Provide a user with CCM Admin rights. Unfortunately, you cannot use the BOC-Admin user by simply assigning those rights. There is a technote from Cisco regarding a conflict with the AXL Role and CCM Admin rights. (Points to the 'User' field in the User Settings section.)
- Provide the SEP of a test phone to validate that the account can access appropriately. (Points to the 'Phone SEP Number to Test' field.)
- Provide the IP address of a test phone to test the various messages sent to that phone (Points to the 'Test Phone IP' field.)
- Add extensions on which an alert will be displayed when 911 is dialed. (Points to the 'Extension' column in the table under 'Display Emergency Call Messages on These Phones'.)

BOC Service Menu on the phones

*** This is entirely optional. It allows the end users to access information via a Services Menu


- parking lot information
- change status
- message history
- Various address books (AD, My Address Book, etc)




Cisco Unified CM Administration
For Cisco Unified Communications Solutions

System ▾ Call Routing ▾ Media Resources ▾ Advanced Features ▾ Device ▾ Application ▾

IP Phone Services Configuration

 Save

Status

 Status: Ready

Service Information

Service Name*

ASCII Service Name*

Service Description

Service URL*

Secure-Service URL


Service Category*

Service Type*

Service Vendor

Service Version

☒ Enable
☐ Enterprise Subscription

 Save

Add the BOC Menu to the phones in the same manner as any other phone service in CallManager.

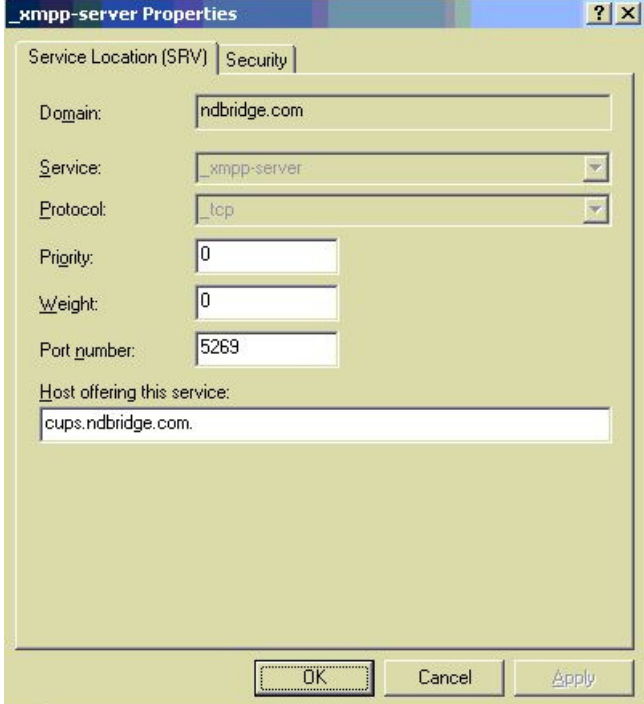
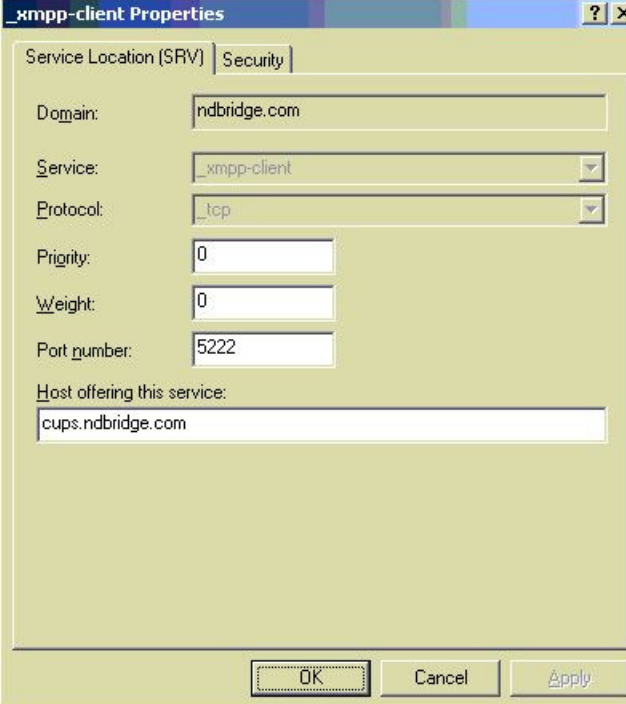
The proper URL is made of the IP address of the Connector server and port configured.

EXAMPLE:

`http://192.168.1.1:18675/mainmenu.htm?name=#DEVICENAME#`

Cisco Unified Presence Configuration

Integration with Cisco Unified Presence Server (CUPS) is an optional configuration. For the BOC Connector to integrate with the CUPS system, there are 2 DNS SRV records which are **REQUIRED**. Without them, authentication **WILL FAIL**.

<div><div><div><div></div><div>_xmpp-server</div></div><div><div></div><div>_xmpp-client</div></div></div><div><div>Service Location (SRV)</div><div>Service Location (SRV)</div></div><div><div>[0][0][5269] cups.ndbridge.com.</div><div>[0][0][5222] cups.ndbridge.com</div></div></div>	<p>The two SRV records will look like this in a Microsoft DNS server environment. Adjust according to your build-out.</p>
 <p>The screenshot shows the '_xmpp-server Properties' dialog box. It has two tabs: 'Service Location (SRV)' and 'Security'. The 'Service Location (SRV)' tab is active. Fields include: Domain (ndbridge.com), Service (_xmpp-server), Protocol (_tcp), Priority (0), Weight (0), Port number (5269), and Host offering this service (cups.ndbridge.com). Buttons at the bottom are OK, Cancel, and Apply.</p>	 <p>The screenshot shows the '_xmpp-client Properties' dialog box. It has two tabs: 'Service Location (SRV)' and 'Security'. The 'Service Location (SRV)' tab is active. Fields include: Domain (ndbridge.com), Service (_xmpp-client), Protocol (_tcp), Priority (0), Weight (0), Port number (5222), and Host offering this service (cups.ndbridge.com). Buttons at the bottom are OK, Cancel, and Apply.</p>

You will need to create a CUPS user for the BOC server. Do not attempt to use a regular user. If they try to login, they will collide with the server and cause issues. In addition, our processes will add all of the users in the CUPS server as contacts.

Authentication is always in the form of xxx@yyy.zzz. We can only authenticate against the CallManager account if it matches the extension. If you would like to use UPN or email address, you must have our Connector running with the LDAP configuration and not AXL.

The screenshot shows the 'BOC TAPI Settings' window with the 'Presence' tab selected. The 'Update BOC Status From an XMPP Server' checkbox is checked. Below it, examples of XMPP servers are listed: Cisco Unified Presense, Jabber, Openfire, and Apache Vysper. The 'XMPP User Jid (user@server)' field contains 'cupsuser@acme.com'. The 'XMPP Jid Password' field is masked with dots. The 'Obtain User's Jids From' dropdown menu is set to 'LDAP EMAIL'. A note at the bottom states: 'BOC will scan the list of emails gathered from ldap and attempt to match status updates to the phone extension. Note you must have the BOC Tapi Connector set to update names from LDAP to use this method.'

BOC TAPI Settings

General | Device Names | Forwarding / Timers | Restart / SMTP | Presence | Phone Messages | Proxy

☒ Update BOC Status From an XMPP Server

Examples : Cisco Unified Presense, Jabber, Openfire, Apache Vysper etc.

XMPP User Jid (user@server)
cupsuser@acme.com

XMPP Jid Password
••••••••

Obtain User's Jids From
LDAP EMAIL

BOC will scan the list of emails gathered from ldap and attempt to match status updates to the phone extension. Note you must have the BOC Tapi Connector set to update names from LDAP to use this method.

On the BOC Connector server, under settings, fill out the Presence tab. You will need a valid CUPS user to connect with. It is best to create an account specifically for this person. If you use an existing account, it may interfere with that user's ability to run CUPS on their own machine.

Click out to save these changes and restart the service.

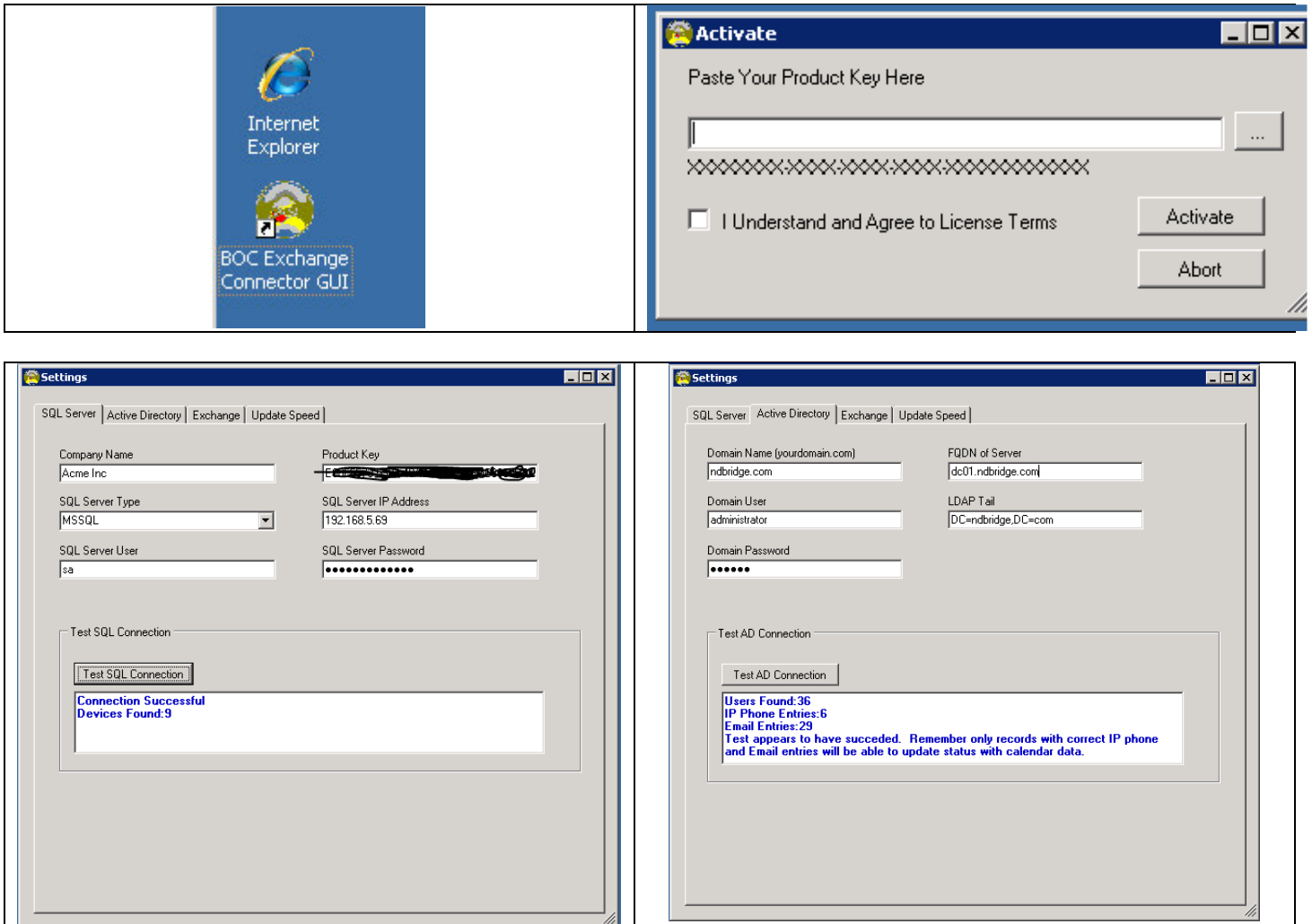
Watch the event log to ensure that proper connections are being made. If the DNS is incorrect or you have invalid username or credentials there will be events to reflect that in the event view logs.

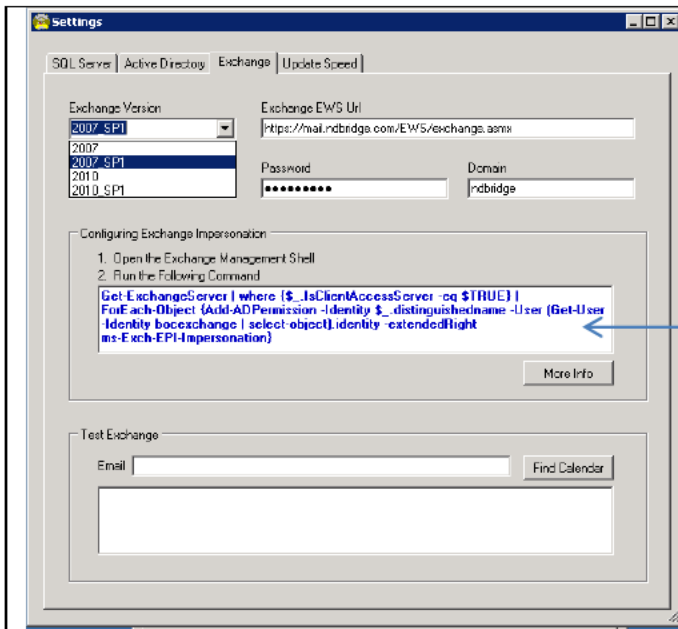
BOC Exchange Connector Program

This document assumes Exchange 2007. The Exchange Connector can be installed on either the Exchange server or the normal BOC Connector server (recommended). We recommend on the BOC server to simplify administration.

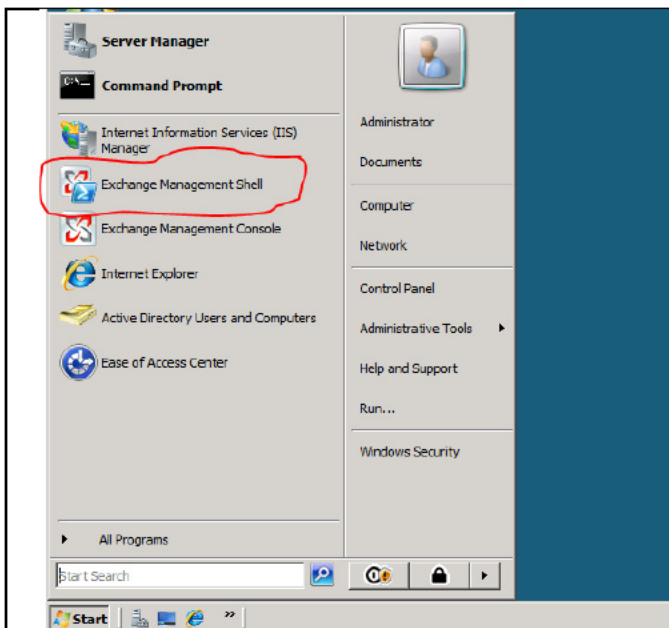
Run SetupBOCExchange.msi or SetupBOCExchange64.msi depending upon your deployment.

The defaults are sufficient for most installs. Upon completion, you will have an icon on your desktop called **BOC Exchange Connector GUI**

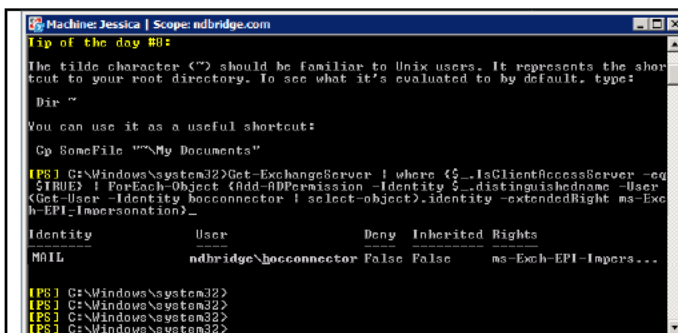


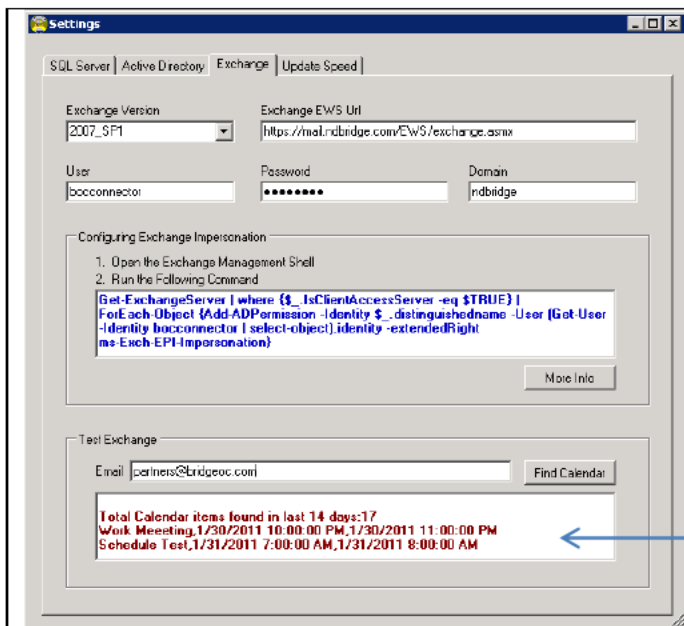


After you properly fill out the top boxes and select the correct version of Exchange, the information displayed in blue in the middle dialog box can be cut and pasted into the Exchange Management shell on your Exchange server to create the rights needed to process Exchange data.

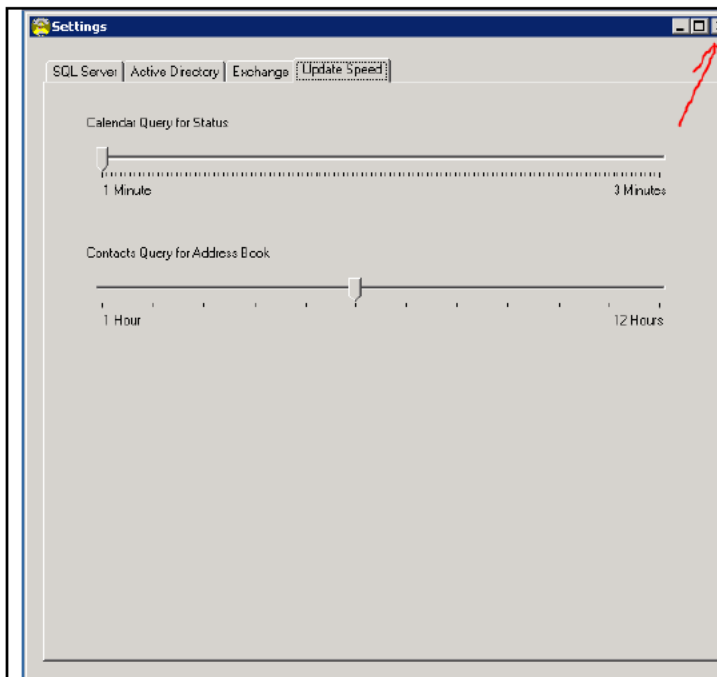


On the Exchange server, run the Exchange Management Shell

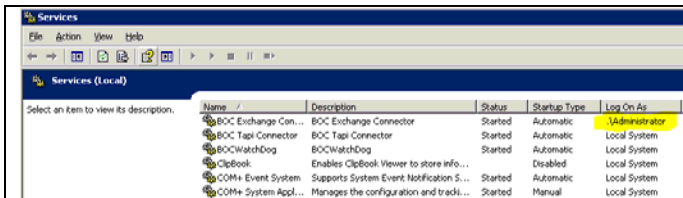




If all tasks have been completed successfully, you should see calendar items when a valid email address is entered in the test window.



You can adjust the update speed as appropriate to your organization. When you've completed, click the X in the upper right corner to save your changes and exit.



Go into services and make the Exchange connector run as a valid user. And reboot the server.

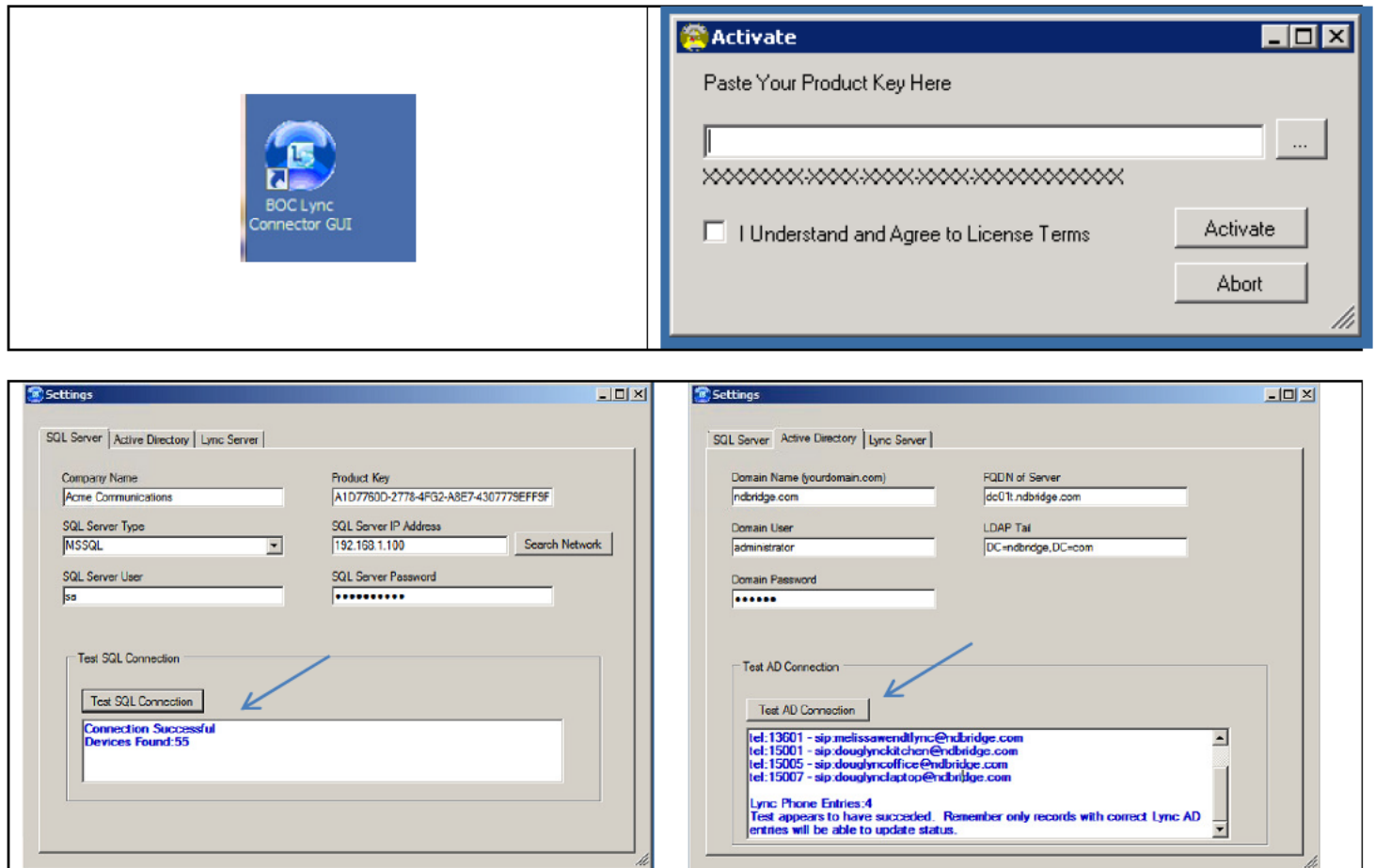
Also, check the Telephony Service and ensure it is set to automatic start as well.

BOC Lync Connector Program

This document assumes Lync 2010. This Connector can be installed on either the Lync server (recommended) or the normal BOC Connector server. There are certificate challenges you will face to get the Lync Connector to run properly on the BOC Connector server, especially if using self-signed certificates.

On the Lync server, run SetupBOCLync.msi or SetupBOCLync64.msi depending upon your deployment.

The defaults are sufficient for most installs. Upon completion, you will have an icon on your desktop called **BOC Lync Connector GUI**



The screenshot shows the Windows Settings application with the 'Lync Server' tab selected. The window has a title bar with 'Settings' and standard window controls. Below the title bar are three tabs: 'SQL Server', 'Active Directory', and 'Lync Server'. The 'Lync Server' tab contains the following fields and instructions:

Lync Server FQDN

Lync User

Lync Password

Lync Instructions

1. Install Certificate from the Lync Server as you would on a client
2. Install Lync Client on this machine to test connection
3. Close this window and restart the service

Fill out each Tab and test.



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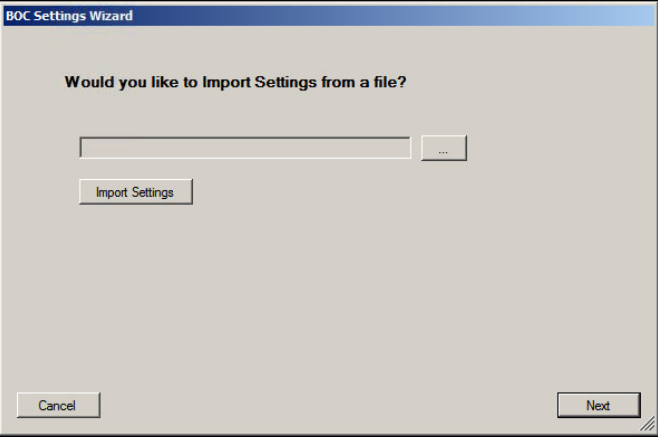
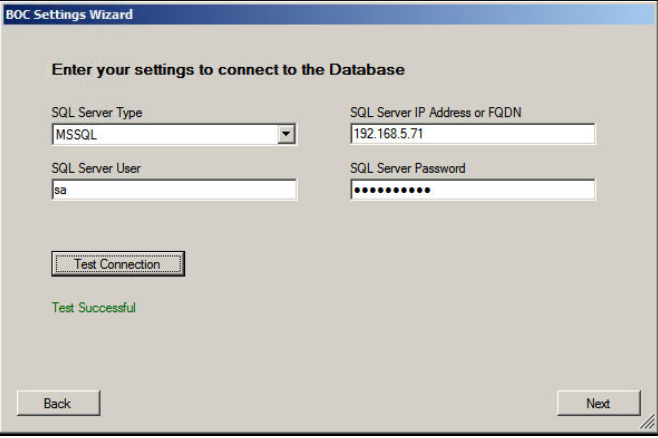
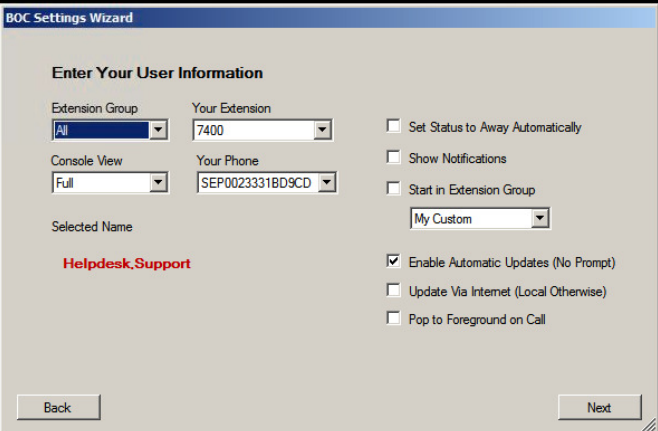
Client Install

If you shared the client folder from the Connector, you can install the client from there.

<\\bocdb.acme.com\bocclient>

After the installation completes, there will be red icon on your desktop called Bridge Operator Console. When you launch it, the BOC Setting Wizard will appear. You will need your license key to complete.

Client Settings Wizard

 The screenshot shows the 'BOC Settings Wizard' window with the title 'Would you like to Import Settings from a file?'. It features a text input field with a browse button ('...') to its right, and an 'Import Settings' button below the field. At the bottom, there are 'Cancel' and 'Next' buttons.	<p>If you've previously exported settings from another client you can import them now. Then all you need to do is select a Extension and a corresponding SEP to complete the configuration of this client. If you do not, simply click "Next".</p>
 The screenshot shows the 'BOC Settings Wizard' window with the title 'Enter your settings to connect to the Database'. It contains four input fields: 'SQL Server Type' (a dropdown menu showing 'MSSQL'), 'SQL Server IP Address or FQDN' (a text field with '192.168.5.71'), 'SQL Server User' (a text field with 'sa'), and 'SQL Server Password' (a masked text field with dots). There is a 'Test Connection' button and a green status message 'Test Successful' below it. 'Back' and 'Next' buttons are at the bottom.	<p>Enter the name or IP address of the database server. Please note, this MAY not be the Connector server IP address if the database is hosted off-box.</p>
 The screenshot shows the 'BOC Settings Wizard' window with the title 'Enter Your User Information'. It includes several fields: 'Extension Group' (dropdown with 'All'), 'Your Extension' (dropdown with '7400'), 'Console View' (dropdown with 'Full'), 'Your Phone' (dropdown with 'SEP0023331BD9CD'), and 'Selected Name' (dropdown with 'My Custom'). There are also several checkboxes: 'Set Status to Away Automatically', 'Show Notifications', 'Start in Extension Group', 'Enable Automatic Updates (No Prompt)' (checked), 'Update Via Internet (Local Otherwise)', and 'Pop to Foreground on Call'. A red link 'Helpdesk,Support' is visible. 'Back' and 'Next' buttons are at the bottom.	<p>Select your Extension and corresponding SEP. At a minimum, this will allow the client to run. The rest of the information is optional.</p>

BOC Settings Wizard

Information about your connection

WAN User

☐ I am running this program across a WAN

Update Speed Fastest [Slider] Slowest

Tapi Hybrid Mode

☐ Enable Tapi Data From This PC

Dial For Outside Line Prepend For VM

9 *

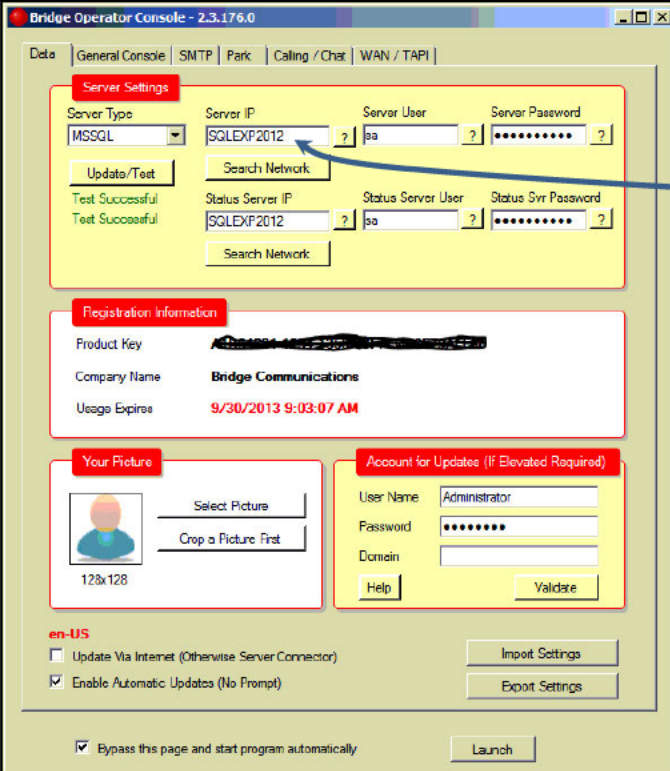
* TO USE THIS FEATURE THE PHONE SYSTEM TSP MUST BE INSTALLED AND CONFIGURED ON THIS PC

Phone Server IP Address [Text Box] Get TSP Driver

Back Finish

If you are on a WAN, you can configure settings here.

Manual Client Configuration



Bridge Operator Console - 2.3.176.0

Data | General Console | SMTP | Park | Calling / Chat | WAN / TAPI

Server Settings

Server Type: MSSQL | Server IP: SQLEXP2012 | Server User: sa | Server Password: [masked]

Update/Test | Search Network

Test Successful

Status Server IP: SQLEXP2012 | Status Server User: sa | Status Svr Password: [masked]

Search Network

Registration Information

Product Key: [masked]

Company Name: Bridge Communications

Usage Expires: 9/30/2013 9:03:07 AM

Your Picture

Select Picture | Crop a Picture First

128x128

Account for Updates (If Elevated Required)

User Name: Administrator | Password: [masked] | Domain: [blank]

Help | Validate

en-US

☐ Update Via Internet (Otherwise Server Connector)

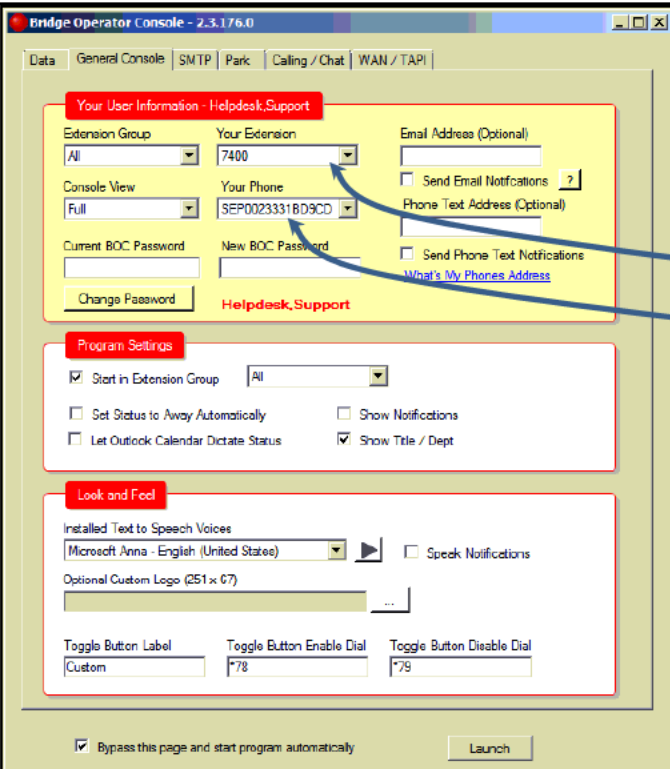
☒ Enable Automatic Updates (No Prompt)

Import Settings | Export Settings

☒ Bypass this page and start program automatically | Launch

The server IP is the FQDN or ip address of the database server, NOT the CallManager. It is best to use a DNS resolved name as it can be centrally changed and the workstations won't need to be reconfigured.

In *most* installations, the Server IP and the Status Server IP are the same server. When this first page is filled out, click the "Update" button and then X out of the settings. Then relaunch the application. It will bring you back to the settings page to complete.



Bridge Operator Console - 2.3.176.0

Data | General Console | SMTP | Park | Calling / Chat | WAN / TAPI

Your User Information - Helpdesk.Support

Extension Group: All | Your Extension: 7400 | Email Address (Optional): [blank]

Console View: Full | Your Phone: SEP00233318D9CD | Send Email Notifications: [checkbox]

Current BOC Password: [blank] | New BOC Password: [blank] | Send Phone Text Notifications: [checkbox]

Change Password | What's My Phone Address

Program Settings

☒ Start in Extension Group: All

☐ Set Status to Away Automatically | ☐ Show Notifications

☐ Let Outlook Calendar Dictate Status | ☒ Show Title / Dept

Look and Feel

Installed Text to Speech Voices: Microsoft Anna - English (United States) | Speak Notifications: [checkbox]

Optional Custom Logo (251 x 67): [blank]

Toggle Button Label: Custom | Toggle Button Enable Dial: *78 | Toggle Button Disable Dial: *79

☒ Bypass this page and start program automatically | Launch

Select the extension that corresponds to the phone you wish to control. If the line is shared or exists for extension mobility, select the SEP corresponding to the phone you wish to control.

This should be sufficient to launch the program. The other settings can be filled out at your leisure.

Exporting BOC Settings

Bridge Operator Console - 2.3.176.0

Data | General Console | SMTP | Park | Calling / Chat | WAN / TAPI

Server Settings

Server Type: MSSQL | Server IP: SQLEXP2012 | Server User: sa | Server Password: [REDACTED]

Update/Test | Search Network

Test Successful | Status Server IP: SQLEXP2012 | Status Server User: sa | Status Svr Password: [REDACTED]

Test Successful | Search Network

Registration Information

Product Key: [REDACTED]

Company Name: Bridge Communications

Usage Expires: 9/30/2013 9:03:07 AM

Your Picture

Select Picture | Crop a Picture First

128x128

Account for Updates (If Elevated Required)

User Name: Administrator | Password: [REDACTED] | Domain: [REDACTED]

Help | Validate

en-US

☐ Update Via Internet (Otherwise Server Connector)

☒ Enable Automatic Updates (No Prompt)

Import Settings | Export Settings

☒ Bypass this page and start program automatically | Launch

Once you have successfully launched the program and made the various personalizations you feel appropriate for your organization, we recommend exporting the settings to a file.

This can be imported on subsequent installations, saving much time and ensuring uniformity in installation.

Configuring Updates - Optional Settings

Bridge Operator Console - 2.3.176.0

Data | General Console | SMTP | Park | Calling / Chat | WAN / TAPI

Server Settings

Server Type: MSSQL | Server IP: SQLEXP2012 | Server User: sa | Server Password: [REDACTED]

Update/Test | Search Network

Test Successful | Status Server IP: SQLEXP2012 | Status Server User: sa | Status Svr Password: [REDACTED]

Test Successful | Search Network

Registration Information

Product Key: [REDACTED]

Company Name: Bridge Communications

Usage Expires: 9/30/2013 9:03:07 AM

Your Picture

Select Picture | Crop a Picture First

128x128

Account for Updates (If Elevated Required)

User Name: Administrator | Password: [REDACTED] | Domain: [REDACTED]

Help | Validate

en-US

☐ Update Via Internet (Otherwise Server Connector)

☒ Enable Automatic Updates (No Prompt)

Import Settings | Export Settings

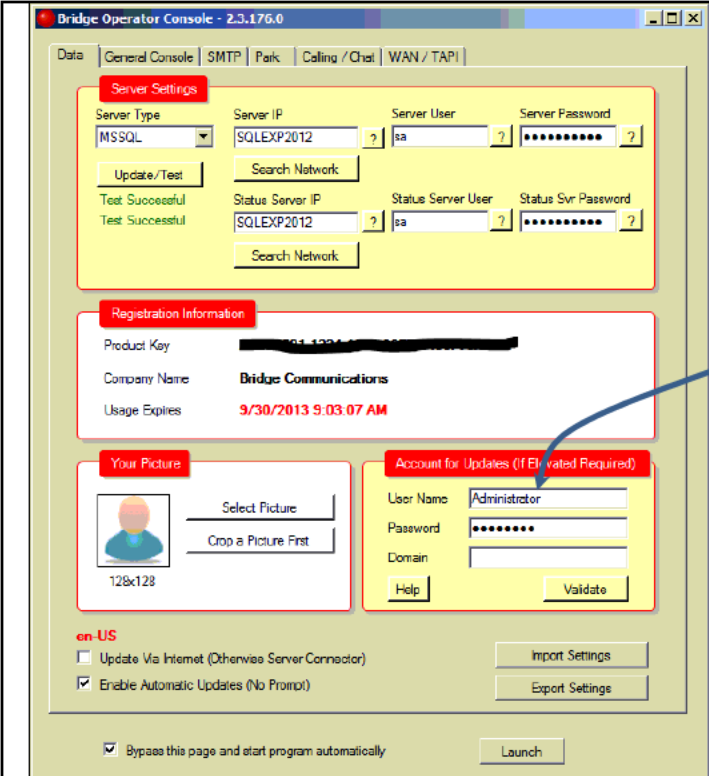
☒ Bypass this page and start program automatically | Launch

Updating is required. You have two options with regard to that.

The 1st option is whether the update takes place WITHOUT user intervention. This is the default. If you would like to give the user the opportunity to opt out of the update at each launch. However, as long as there is an update available, the user WILL be prompted at each launch to update.

The 2nd option is to choose where to check license validity and where to get updates from. The default is to check the Connector server. The other option is to go straight to the internet.

Configuring Updates - Elevated Privilege Settings



Bridge Operator Console - 2.3.176.0

General Console | SMTP | Park | Calling / Chat | WAN / TAPI

Server Settings

Server Type: MSSQL
Server IP: SQLEXP2012
Server User: sa
Server Password: [Masked]
Update/Test
Test Successful
Test Successful

Search Network

Status Server IP: SQLEXP2012
Status Server User: sa
Status Svr Password: [Masked]
Search Network

Registration Information

Product Key: [Masked]
Company Name: Bridge Communications
Usage Expires: 9/30/2013 9:03:07 AM

Your Picture

Select Picture
Crop a Picture First
128x128

Account for Updates (If Elevated Required)

User Name: Administrator
Password: [Masked]
Domain: [Empty]
Help Validate

on-US

☐ Update Via Internet (Otherwise Server Connector)
☒ Enable Automatic Updates (No Prompt)

Import Settings
Export Settings

☒ Bypass this page and start program automatically
Launch

If the normal user of the application does not have rights to install applications locally, the auto updates will fail. This can be addressed by providing credentials of another user with elevated privileges. This does not need to be an administrator, only a user with rights to install applications locally.

NOTE: You MUST login into the workstation once as this user and configure the BOC Client. These credentials will be used in an impersonation to apply updates when logged in as the normal operator.

If the user you wish to use is a machine local account and NOT a domain account, set the Domain field to **NONE**.

Hybrid Mode

In this mode, the client will gather certain live call information directly from the TAPI stream thus speeding up processing. There are 2 parts to enabling Hybrid Mode. **First, the TSP must be downloaded from the CallManager and installed on the workstation.** When completed and tested, go into the BOC Client settings and enable it by checking "Enable Hybrid Mode". You will also need the number to dial external numbers and the VoiceMail prepend character.

Cisco TAPI Driver (TSP) install on Client

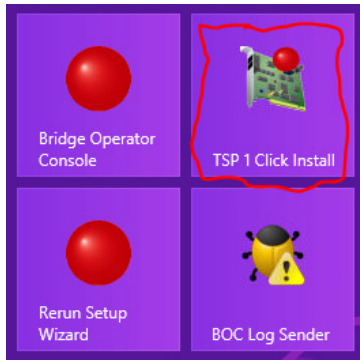
You will need to install the TAPI driver from your CallManager Server. You must match the processor version (32bit or 64bit) of the TSP to the version of the workstation. There is no 64 bit driver for CallManager prior to 8.5 Update 1. You cannot run the 32 bit TSP on a 64bit workstation. In addition, the 32 bit driver prior to 8.5 Update 1 does NOT support Windows Vista or Windows 7 32bit.

TSP 1 Click Install

This tool will attempt to automate the download and installation of the Cisco TSP. This should be run as a user with enough rights to do a software installation.

It should also, only be run if there is no TSP installed. It will not be able to update or change settings for an existing installation.

The tool will attempt to locate the "closest" CUCM based on ping time. It will then download the appropriate version of the TSP for your OS from the CUCM. It will bring the username and password from the BOC Server in an encrypted form so you will not need to type that in either.



1 Click TSP Install - Bridge Communications

Ping Time	Server
00001	192.168.5.36

Windows OS: Microsoft Windows 8 Pro
 Bits: 64
 CM TSP Ver: 9.1.1.3

Already Installed: False
 Installed Ver: Not Installed

Errors Detected:

Install Settings to Use

Server	User
Server 1: 192.168.5.36	BOC-Admin
Server 2:	Password: *****

Change Server IP Addresses as Needed Before Clicking Install

Begin 1 Click Install

Manually Install TSP on Client for hybrid

Access the following URL,

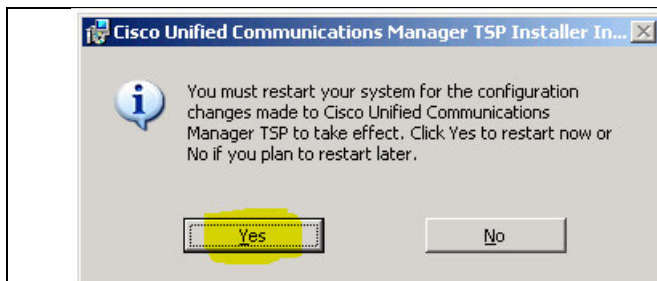
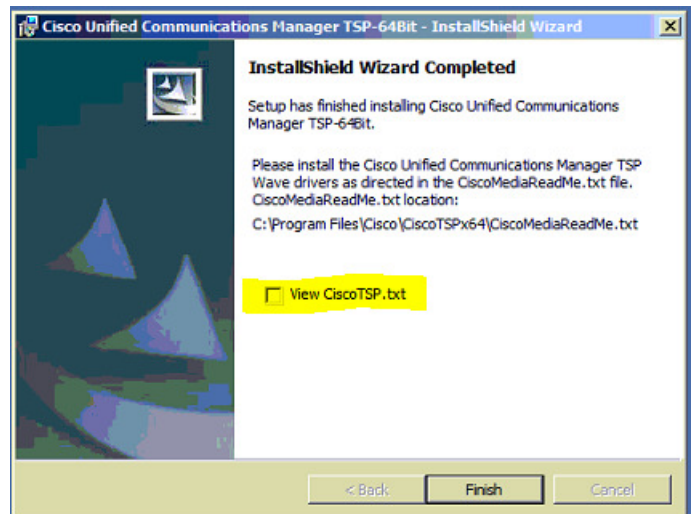
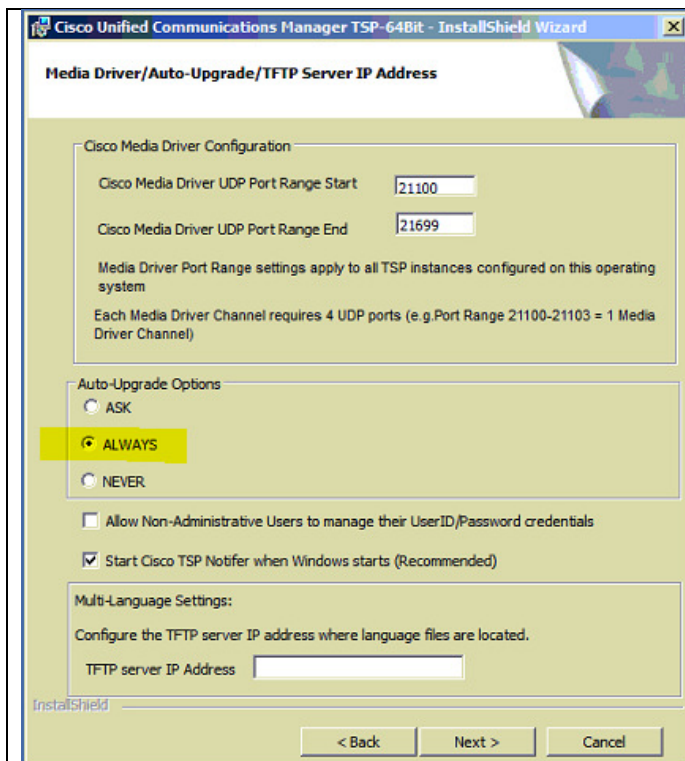
<https://<your CUCM>/plugins/CiscoTSP.exe> for 32bit OS

<https://<your CUCM>/plugins/CiscoTSPx64.exe> for 64bit OS

Install the TSP using the default installation directories.

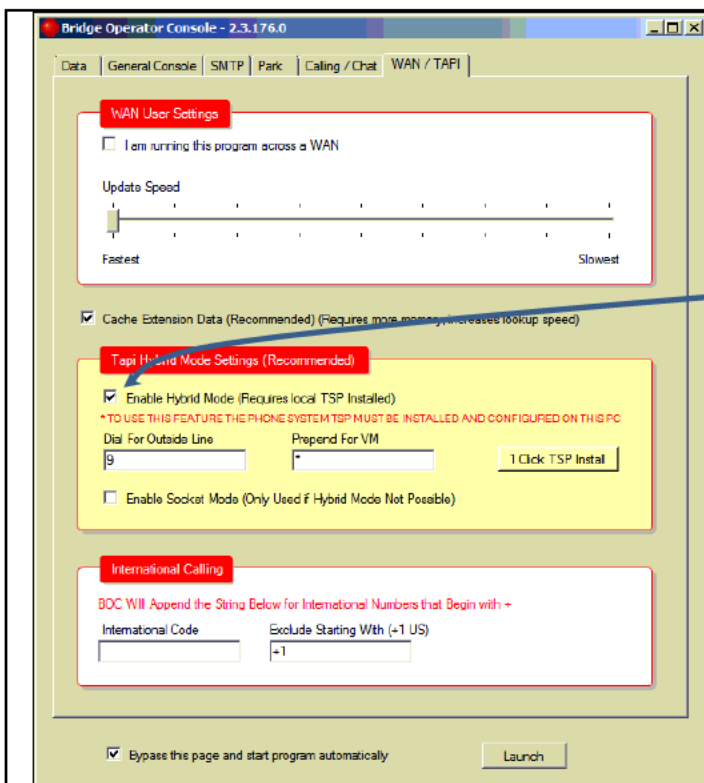
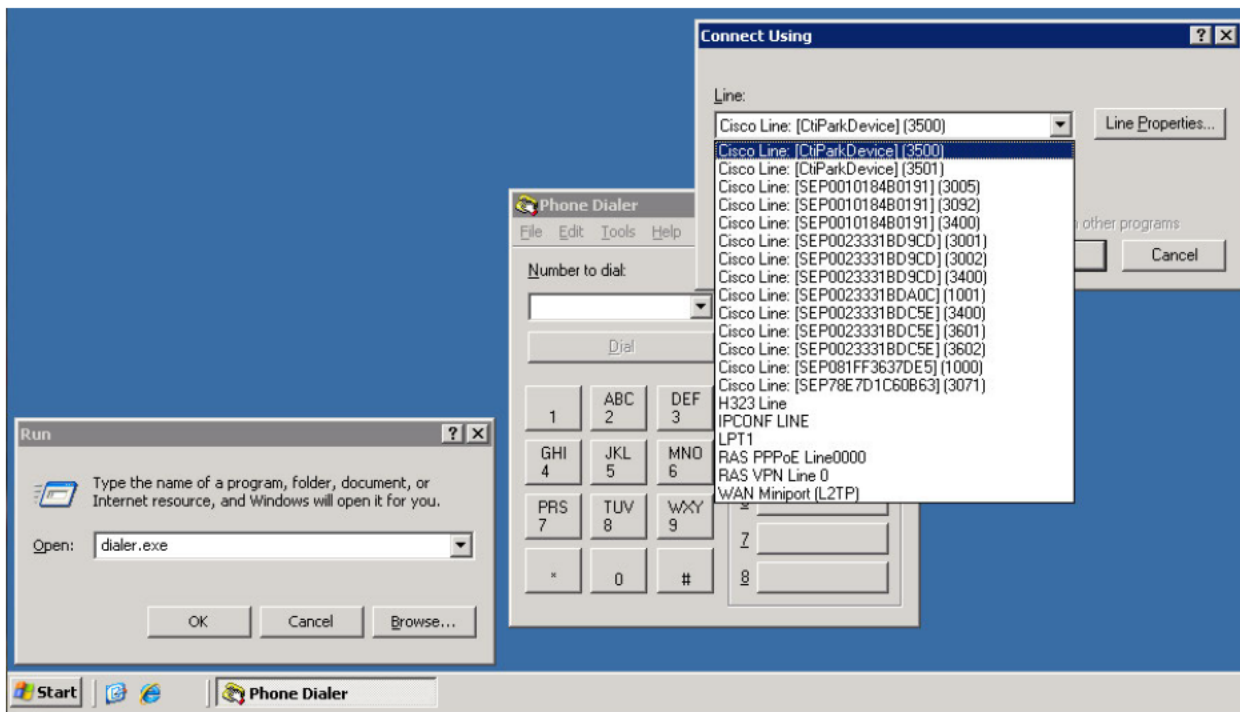
You may answer no to this question.... Enter the IP address of your CUCM server on the next window.

Configure using the information from the Call Manager Objects document. The CTI Managers should reflect your Publisher and if available, subscriber CUCM.



Testing TAPI Connection

You should validate that the TSP service is functioning before proceeding by running DIALER.EXE. When you see the “Connect Using” pull-down, you should see your phones listed. If you do not, go back and double check the CallManager objects creation process documentation. Frequently it’s a missed step or a password problem.



When the TSP install is completed and tested, go into the BOC Client settings and enable it by checking "Enable Tapi Data From This PC"

You will also need the number to dial external numbers and the VoiceMail prepend character.

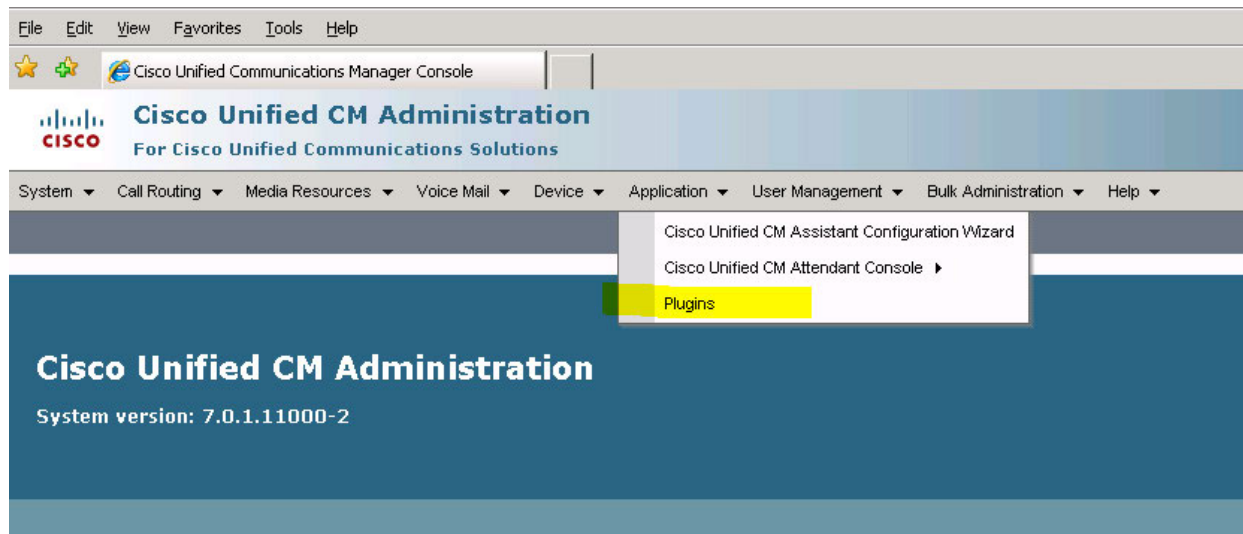
Appendix A

Install TSP on BOC Server or Console for CUCM 7.x and Prior systems

Access the URL, <https://<your CUCM>/plugins/CiscoTSP.exe> and run it.

Install the TSP using the default installation directories.

You can access it via CCM-Admin web page thru here.



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This product contains cryptographic features and is subject to United States and local country laws governing import, export, transfer and use. De Importers, exporters, distributors and users are responsible for compliance with U.S. and local country laws. By using this product you agree to c immediately.

A summary of U.S. laws governing Cisco cryptographic products may be found at: <http://www.cisco.com/www/export/crypto/tool/starq.html>.
If you require further assistance please contact us by sending email to export@cisco.com.

Cisco Unified CM Administration
For Cisco Unified Communications Solutions

System ▾ Call Routing ▾ Media Resources ▾ Voice Mail ▾ Device ▾ Application ▾ User Management ▾

Find and List Plugins

Status
12 records found

Plugin (1 - 12 of 12)
Find Plugin where Name ▾ begins with ▾ and Plugin Type equals ▾ Inst

Download	Plugin Name ^	
Download	Cisco CTL Client	This plugin retrieves the CTL file from the Cisco TFTP server. It...
Download	Cisco CallManager AXL SQL Toolkit	Cisco CallManager AXL SQL Toolkit, a zip file that contains a Jav...
Download	Cisco IP Phone Address Book Synchronizer	Cisco IP Phone Address Book Synchronizer allows users to sync...
Download	Cisco JTAPI for Linux	Install this plugin on all computers that host applications that int...
Download	Cisco JTAPI for Solaris Sparc	Install this plugin on all computers that host applications that int...
Download	Cisco JTAPI for Solaris X86	Install this plugin on all computers that host applications that int...
Download	Cisco JTAPI for Windows	Install this plugin on all computers that host applications that int...
Download	Cisco TAPS for Windows	Cisco Tool for Auto-Registered Phone Support (TAPS) loads a pr...
Download	Cisco Telephony Service Provider	This product contains the Cisco TAPI service provider (TSP) and...

File Download - Security Warning

Do you want to run or save this file?

Name: CiscoTSP.exe
Type: Application, 13.5MB
From: 192.168.5.36

Run Save Cancel

While files from the Internet can be useful, this file type can potentially harm your computer. If you do not trust the source, do not run or save this software. [What's the risk?](#)

Or the URL, <https://<your CUCM>/plugins/CiscoTSP.exe>

Install the TSP using the default installation directories.

You may answer no to this question.... Enter the IP address of your CUCM server on the next window.

Cisco Unified Communications Manager TSP Setup

Do you want to Install Multiple Instances of Cisco Unified Communications Manager TSP?

Yes No

TFTP Server IP Address

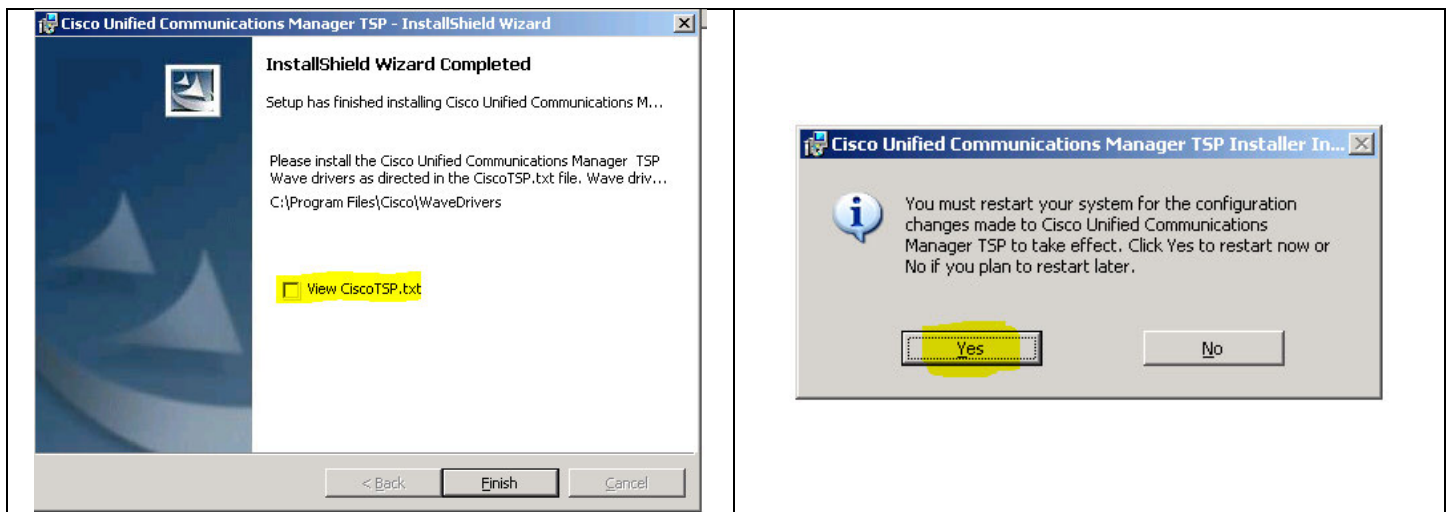
TFTP server IP Address

Note:
When the TSP preferences UI is opened for the first time after installation, the language files are automatically downloaded from the TFTP server IP address mentioned above.
If the above field is left blank, then the user will have to manually configure the TFTP server IP address and then download the language files in the languages tab.

InstallShield

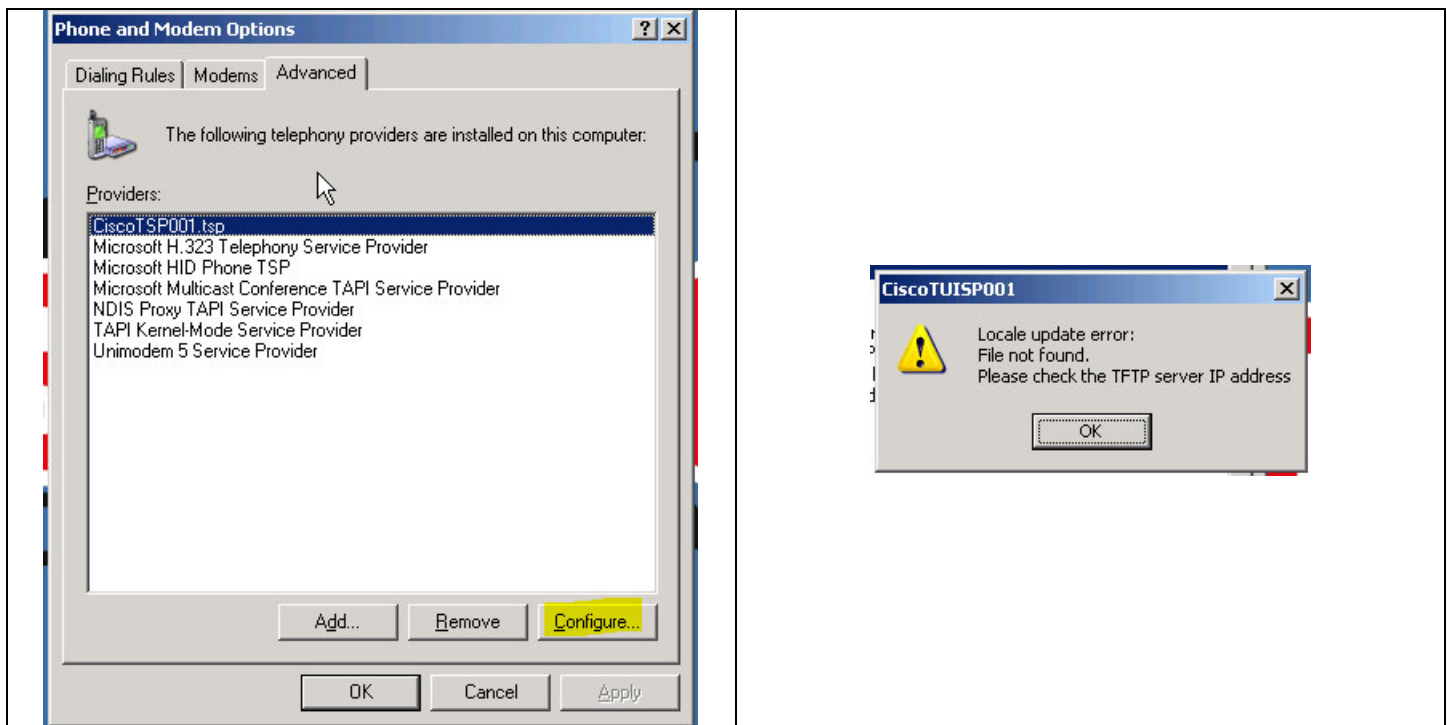
< Back Next > Cancel

Uncheck the “View CiscoTSP.txt” box and Restart as requested

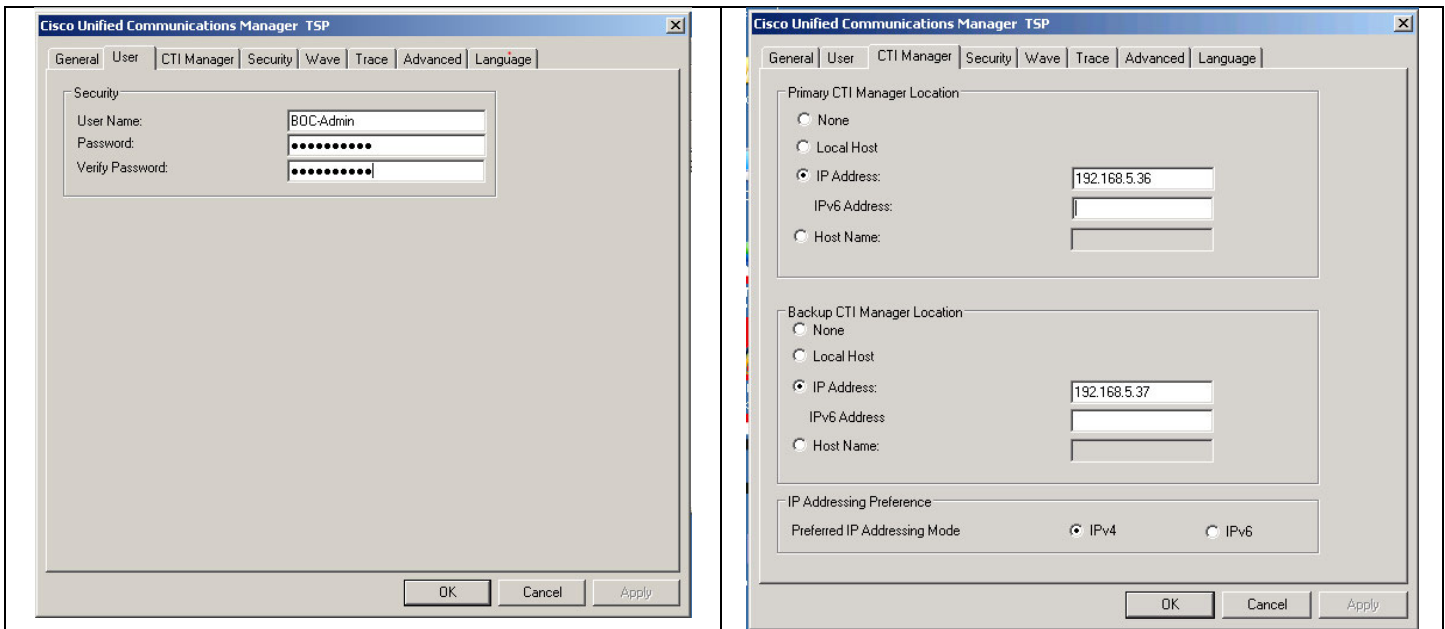


After the reboot, go into the Windows Control Panel and “Phone and Modems “.

Click on the “Advanced” tab and configure the CiscoTSP001.tsp provider, ignore this error if it pops.



Configure using the information from the Call Manager Objects document.

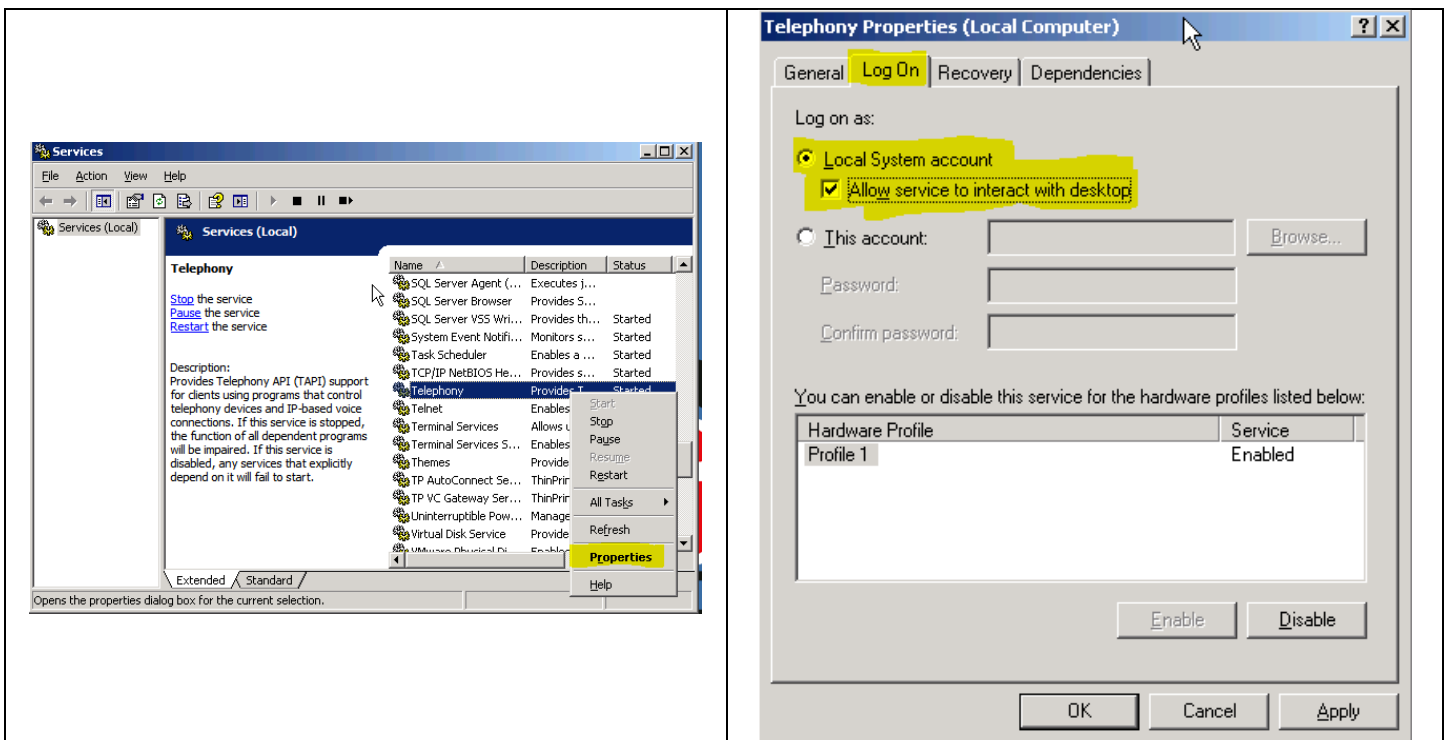


These should reflect your Publisher and if available, one subscriber CUCM.

After that, you may click Ok and save out.

TAPI AutoUpdate

Go into Windows Services. We need to make a change to the Telephony service to ensure updates to the TAPI driver on the CallManager flow out to the Connector.

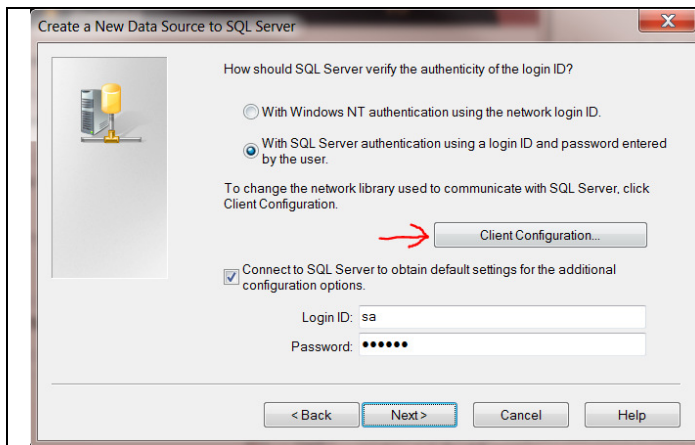
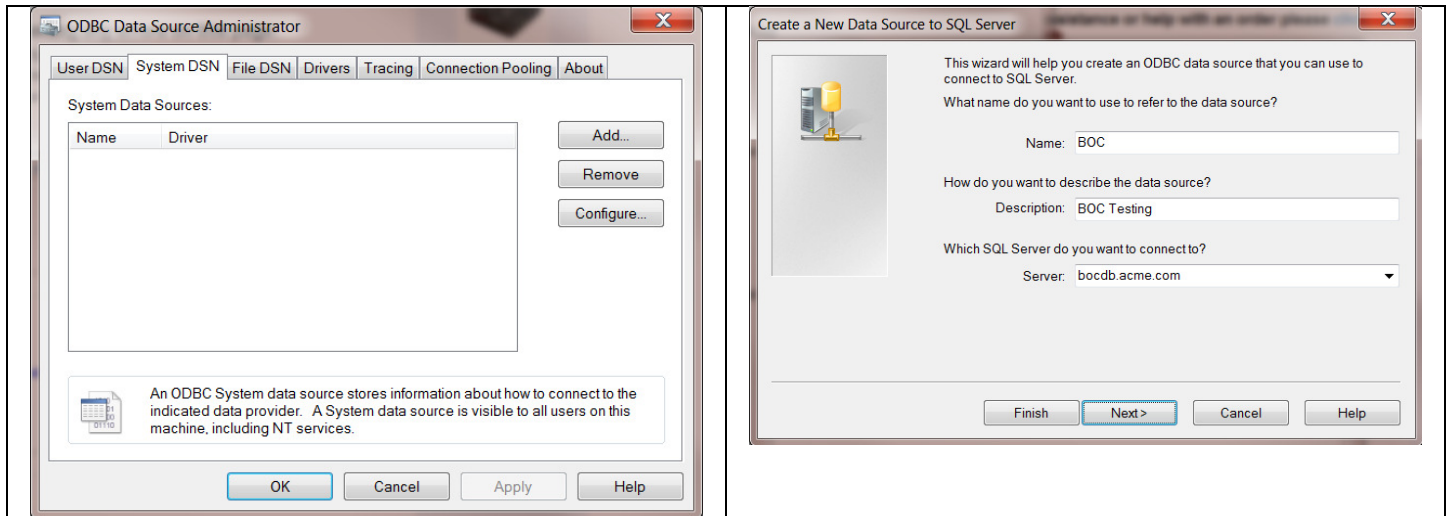


You can then save and restart the service.

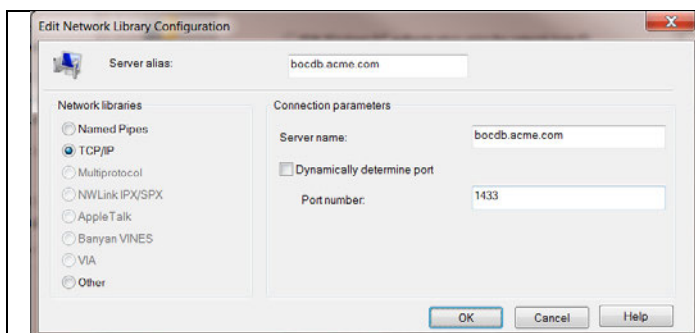
Testing ODBC Connection

Verify that the DNS entries are working by pinging bocdb.<domain name> ... bocdb.acme.com

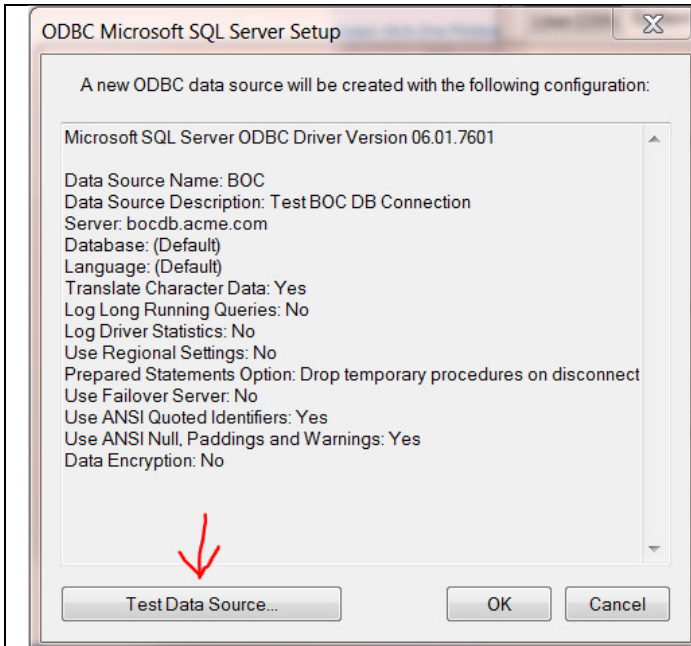
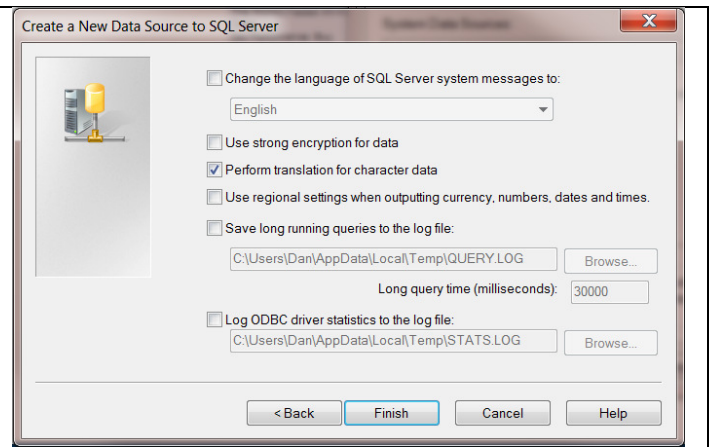
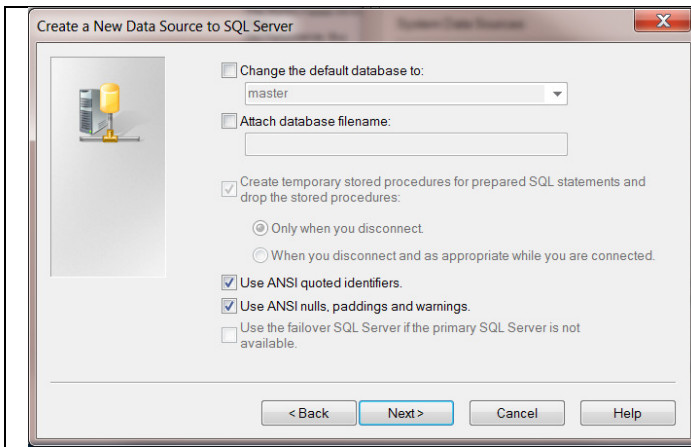
Launch odbcad32.exe. Go to the System DSN tab and add a new SQL Server connection.



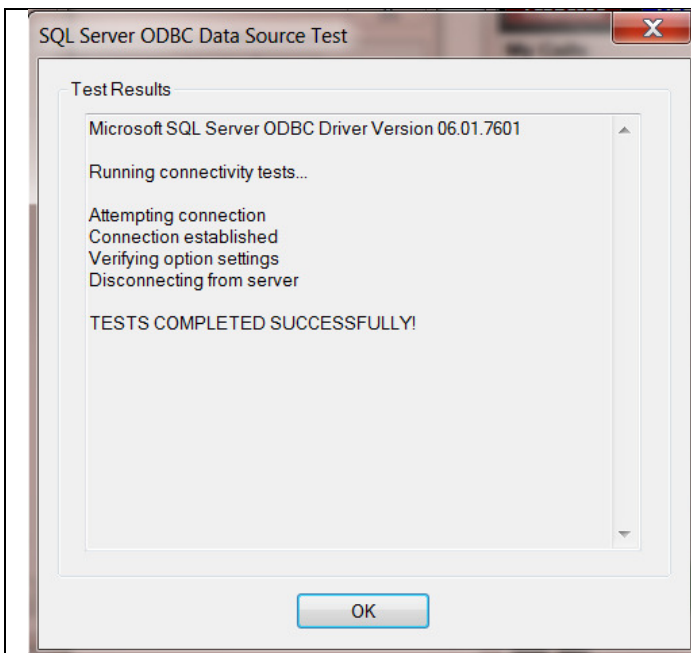
Change to SQL Server Authentication
Give is sa username and password you defined in the SQL install.



Uncheck the **Dynamically determine port** and force it to 1433.
The click OK and Next.



Click Test Data Source



If the connection is successful, you may continue. If it fails go back over the SQL setup steps and verify them until it does.

Double check firewall settings on the machine as well. We recommend disabling the firewall until the product is set up and verified working. At that time you can turn the firewall on and begin the lockdown and allow process.

